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94-027

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offered

Appel 532-1852 Mary
Hartungson R4 Wong

Exhibits

Kingston
Hansen

Water Users

p46:14 Admitted

CO-OP admitted
377, 419 11/17 415 Vol II 378:20

p46:8 Admitted

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141:25 objections 151:13 reserving 335 Vol II recess

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Linda -
263-1396

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Appel

★ Designate which Exhibits for

★ CO-OP = write Out

CASTLE VALLEY SPECIAL
SERVICE DISTRICT, NORTH
EMERY WATER USERS
ASSOCIATION, and HUNTINGTON-
CLEVELAND IRRIGATION COMPANY,

UTAH BOARD OF OIL, GAS AND
MINING,

C.W. MINING COMPANY d/b/a
CO-OP MINING COMPANY

BRIEF OF RESPONDENT
BOARD OF OIL, GAS & MINING

Priority No. 14

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List of All the Parties

The respondent in this appeal is the State of Utah's Board of Oil, Gas and Mining (the "Board"). The appeal has been filed jointly by the Castle Valley Special Service District (the "Service District"), the North Emery Water Users Association (the "Water Association"), and the Huntington-Cleveland Irrigation Company (the "Irrigation Company"). The Service District, the Water Company and the Irrigation Company are collectively referred to herein as the "Water Users." The Board's decision being challenged on appeal by the Water Users concerns the Board's approval of a certain significant permit revision to a coal mine in Emery County. The proceeding before the Board was assigned Cause Number ACT/015/025-93B, Docket Number 94-027. The mine, called the Bear Canyon Mine, is operated by the intervenor, C.W. Mining Company d/b/a Co-Op Mining Company's ("Co-Op").

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CASTLE VALLEY SPECIAL)	
SERVICE DISTRICT, NORTH)	
EMERY WATER USERS)	BRIEF OF RESPONDENT
ASSOCIATION, and HUNTINGTON-)	BOARD OF OIL, GAS & MINING
CLEVELAND IRRIGATION COMPANY,)	
)	
Petitioners,)	Case Number: 950487
vs.)	
)	
UTAH BOARD OF OIL, GAS AND)	
MINING,)	
)	
Respondent.)	Priority No. 14
)	
<hr/> C.W. MINING COMPANY d/b/a)	
CO-OP MINING COMPANY)	
)	
Intervenor.)	

The appeal from the Order of the Board of Oil, Gas and Mining (the "Board") has been filed jointly by the Castle Valley Special Service District (the "Service District"), the North Emery Water Users Association (the "Water Association"), and the Huntington-Cleveland Irrigation Company (the "Irrigation Company"). The Service District, the Water Company and the Irrigation Company are collectively referred to herein as the "Water Users." The Board's decision being challenged on appeal by the Water Users concerns a certain significant permit revision to a coal mine in Emery County. The mine, called the Bear Canyon Mine, is operated by the intervencor, C.W. Mining Company d/b/a Co-Op Mining Company's ("Co-Op").

Under Utah Code Ann. §§ 78-2-2(3)(e)(ii) and -4(g) (1953, as amended), the Supreme Court has non-transferable

appellate jurisdiction over appeals from "decrees in formal adjudicative hearings originating with the Board of Oil, Gas & Mining" (the "Board"). Moreover, Utah Code Ann. § 40-10-30 (1953, as amended), which is part of the Utah Coal Mine Reclamation Act codified at Title 40, Chapter 10 of the Utah Code (the "Utah Coal Act"), states that the Supreme Court has jurisdiction to review appeals from formal adjudications by the Board. That statute, entitled "Judicial Review of Rules or Orders," provides in pertinent part:

(1) Judicial review of adjudicative proceedings under this chapter is governed by Title 63, Chapter 46b, Administrative Procedures Act, and provisions of this chapter consistent with the Administrative Procedures Act.

. . . .

(3) An appeal from an order of the board shall be directly to the Utah Supreme Court and is not a trial de novo. The court shall set aside the board action if it is found to be:

(a) unreasonable, unjust, arbitrary, capricious, or an abuse of discretion;

(b) contrary to constitutional right, power, privilege, or immunity;

(c) in excess of statutory jurisdiction, authority, or limitations;

(d) not in compliance with procedure required by law;

(e) based upon a clearly erroneous interpretation or application of the law; or

(f) as to an adjudicative proceeding, unsupported by substantial evidence on the record.

(4) An action or appeal involving an order of the board shall be determined as expeditiously as feasible and in accordance with Section 78-2-2. The Utah Supreme Court shall determine the issues on both questions of law and fact and shall affirm or set aside the rule or order, enjoin or stay the effective date of agency action, or remand the cause to the board for further proceedings. Judicial review of disputed issues of fact shall be confined to the agency record. The court may, in its discretion, receive additional evidence for good cause shown.

Id. (emphasis added).

II. STATEMENT OF ISSUES & STANDARD OF REVIEW

It is axiomatic that a party may not raise an issue on appeal that has not been properly preserved for appeal in the proceedings below. State of Utah v. Alvarez, 872 P.2d 450 (Utah 1994). Also, in general, issues raised for the first time only after the lower court has already completed the trial are not timely raised or preserved for appeal. See, e.g., Barson v. E.R. Squibb & Sons, Inc., 682 P.2d 832, 837 (Utah 1984); Beehive Medical Electronics, Inc. v. Soters, 669 P.2d 859, 861, (Utah 1983); Estate of Covington v. Josephson, 888 P.2d 675 (Ut. Ct. App. 1994). With regard to the first three of the four issues raised by the Water Users, they have ignored the express requirement in Rule 24(a)(5)(A) of the Utah Rules of Appellate Procedure that the Water Users show, up front, that the issues raised on appeal were in fact "preserved in the trial court" (i.e., in this case, the Board). In that sense, the "Statement of the Issues" section in the Water Users' Brief at pages 1-3 simply does not comport with the minimum requirements of this Court. In the Argument section of this Brief, the Board will elaborate on the fact that the Water Users asked the Board to make the subject matter findings which they now contest.

The Board concedes for purposes of this appeal that the Water Users' fourth issue on appeal, concerning the federal "water replacement" statute cited by the Water Users, was preserved for appeal, and thus the court should reach the merits of that issue.

The first "three" issues on raised on appeal are different ways of saying the same thing: That the Water Users now object because the Board made findings of fact and conclusions of law concerning the complex and technical issue which goes by the term of art known as the "cumulative hydrologic impact assessment" ("CHIA," usually pronounced as CHEE-a). The CHIA issue determined by the Board was made in connection with a request by Co-Op to the Division of Oil, Gas and Mining (the "Division") for a "Significant Permit Revision" (yet another term of art in the Utah Coal Program) to an existing permit for the Bear Canyon Mine.¹ In essence, Co-Op asked the Division for permission significantly to revise its Permit so it could commence underground coal mining pursuant to its "old" Permit in a "new" seam of coal (known as the Tank Seam).² Without the revision, Co-Op could only continue to mine that certain seam of coal located about 250 feet below the Tank Seam (i.e., the Blind Canyon Seam). Co-Op needed permission to expand into the "new" seam of coal even though the "new" seam was within the horizontal geographic boundaries of the "old" Permit Area. For a map showing the Mine in relation to the springs used by the Water Users, see Addendum Tab 1: Record on Appeal Page 488: Topographic Map entitled, "Locations of Springs in Vicinity of

¹The Bear Canyon Mine is in Emery County, though several captioned documents had typographic errors suggesting it is in Carbon County. The location of the mine is not in dispute.

² A "Significant Permit Revision" to an existing Permit is reviewed by the Division, and the Board, pursuant to the same substantive regulations which apply to completely new permit applications. See Utah Admin. Code R645-303-200.226.

the Mine Permit Area."

The Water Users cast their first CHIA challenge to the Board's approval of the Significant Permit Revision³ in jurisdictional terms. The Water Users allege, in essence, that the Board lacks the legal authority to make subsidiary factual findings about the hydrology of the Blind Canyon Seam (i.e., the "old" seam) in the context of making overall CHIA findings germane to the question whether the Mining Company should also be allowed to mine in both that "old" seam and in the "new" Tank Seam. The ability of the Division, and the Board, to protect hydrological resources in and adjacent to coal mine permit areas in Utah would be seriously impaired if this Court were to accept the Water Users' artificially restricted view of the jurisdictional provisions in the Utah Coal Act.

The Water Users' second CHIA-related challenge is the same as the first, but restated under the rubric of arbitrary and capricious agency action, and thus adds nothing new to the first issue (i.e., the jurisdictional argument).

The third CHIA-related challenge is to the effect that the Water Users allegedly were denied notice, and thus due process, that the Board would, in this case, resolve contested CHIA issues pertaining to the cumulative hydrological relationship, if any, between Birch Spring and/or Big Bear Spring, on the one hand, and coal mining in the Tank Seam and Blind Canyon Seam, on the other hand. The third issue is also a

³See Tab 2 of the Addendum: Written Findings re "Significant Permit Revision Approval" (copy of Record on Appeal Page 389).

make-weight issue, because, like the second, it begs the question raised by the jurisdictional question.

The first three issues--which really boil down to one issue: jurisdiction--were not properly preserved for appeal, so the Board cannot agree that these are legitimate "issues" in this appeal. The first time the jurisdictional issue was raised below was after a two day evidentiary hearing, after closing arguments, and after post-hearing briefs. At all times prior to the entry of the Board's Order, the Water Users argued again and again--correctly, by in large--that the Board has broad jurisdiction, and even an affirmative duty, to consider foundational evidence of cumulative hydrologic impacts from the mine operation in the Blind Canyon Seam combined with impacts from the proposed new mining in the Tank Seam.

The standard of review is, as noted in the preceding section of this Brief, that findings of fact supported by substantial evidence in the record shall not be set aside.

III. STATUTORY PROVISIONS

In the interest of brevity, many of the relevant statutes and administrative rules concerning the Utah Coal Program are set forth below in the Argument section of this Brief. However, two very important provisions of the Utah Code which apply to this appeal are as follows:

The Utah Coal Act, at Utah Code Ann. § 40-10-2, entitled "Purpose," states:

It is the purpose of this chapter to:

(1) Grant to the board and division of oil, gas, and

mining the necessary authority to assure exclusive jurisdiction over non-federal lands and cooperative jurisdiction over federal lands in regard to regulation of coal mining and reclamation operations as authorized pursuant to Public Law 95-87.

Id. And, another key provision of the Utah Coal Act, Utah Code Ann. § 40-10-10(2)(c) (1953, as amended), provides:

(2) The permit application, and the reclamation plan submitted as part of a permit application shall be submitted in the manner, form, and content specified by the division in the rules and shall include the following:

(c) A determination of the probable hydrologic consequences of the mining and reclamation operations, both on and off the mine site with respect to the hydrologic regime, quantity and quality of water in surface and groundwater systems, including the dissolved and suspended solids under seasonal flow conditions, and the collection of sufficient data for the mine site and surrounding areas so that an assessment can be made by the division of the probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area and, particularly, upon water availability; but this determination shall not be required until such time as hydrologic information on the general area prior to mining is made available from an appropriate federal or state agency. The permit shall not be approved until this information is available and is incorporated into the application.

Id.

III. STATEMENT OF THE CASE

The Water Users either own or claim the right to use water from Birch Spring, Big Bear Spring, or both, in Emery County, Utah. These springs are located adjacent to and in near proximity to the operations of Co-Op's Bear Canyon Coal Mine. These springs are a source of water for many residents of northern Emery County, Utah, and for irrigation purposes.

In 1993, the Water Users received notice from the

Division that Co-Op had filed an application for a Significant Permit Revision to its mining permit to extend mining into the Tank Seam in the Bear Canyon Mine. This coal seam is found in a stratigraphic layer located above the area then mined by Co-Op, which is known as the Blind Canyon Seam. At this time, mining was continuing in the Blind Canyon Seam under Co-Op's existing permit which was renewed in November of 1990, and carried a presumptive right of renewal at the time of permit renewal proceedings in November of 1995. On August 12, 1993, the Water Users filed their objections to the proposed mining in the Tank Seam, alleging in part:

- a. Co-Op's past mining operations have contaminated Big Bear Canyon Springs and the aquifers feeding the springs.
- b. Co-Op's past mining operations have adversely and permanently impacted the level of flow of Big Bear Canyon Springs. The flows have significantly diminished as a result of Co-Op's mining operations and have not recovered and/or recharged even after the most recent "wet" water year.

Id. (copy reproduced in Appendices to Water Users' Joint Brief, at Tab C).

After an informal hearing was held by the Division, approval of the Significant Revision was granted on July 21, 1994. See, Appendices to the Water Users' Joint Brief at Tab C.

On August 22, 1994, the Water Users filed a Request for Agency Action and Appeal with the Board, requesting that the Board reverse the Division's decision to approve Co-Op's Significant Permit Revision to extend its mining operations into the Tank Seam. In the alternative, the Water Users requested

that the Board order Co-Op to provide replacement water to mitigate the alleged adverse impacts on their springs caused by mining activity. Record on Appeal at 3.⁴ (Copy reproduced in Appendices to the Water Users' Joint Brief at Tab F.)

The Water Users' appeal from the Division to the Board alleged that Co-Op had not taken adequate measures to protect the Water Users' water sources either in its present mining areas or in its proposed mining of the Tank Seam. The Water Users further alleged that their water sources had suffered material negative impacts from Co-Op's mining operations, including in part the following:

- a. Co-Op's past mining operations have contaminated Big Bear Spring and Birch Spring and the aquifers feeding these springs.
- b. Co-Op's past mining operations have adversely and permanently impacted the level of flow of Big Bear and Birch Springs. The flows have significantly diminished as a result of Co-Op's mining operations and have not recovered and/or recharged even after the "wet" water years.

Record on Appeal at 4-5. (Copy reproduced in Appendices to the Water Users' Joint Brief at Tab F, pages 4-5).

In addition, the Water Users alleged below that Co-Op's expansion of mining operations into the Tank Seam would continue and increase the adverse effects upon their springs; that the proposed expansion would continue to harm their vested water rights and sources; that evidence of subsidence along the faults from which the springs flow demonstrates that Co-Op's present

⁴ Citations in this Brief to the "Record on Appeal" refer to the record prepared for the Supreme Court appeal.

mining is impacting those faults; that current drainage of water encountered in the mine was being diverted from their springs; that existing mining was intersecting the source of recharge for their springs; that the probable hydrological consequence document and the cumulative hydrological impact assessment relied upon by the Division was flawed and failed to recognize the adverse impact of Co-Op's existing mining and mine watering activity on the regional aquifers and thus failed to protect the Water Users' springs. Therefore, the Water Users alleged that the approval of the Significant Revision violated the programmatic requirements to minimize disturbance to the hydrological balance, in particular, of the Water Users' springs. Record on Appeal at 5-8. (Copy reproduced in Appendices to the Water Users' Joint Brief at Tab F, pages 5-8).

On October 4 and 6, 1994, the Board issued Notices of Hearing advertising to all interested persons that:

"The purpose of the proceeding will be for the Board to consider the objection of the petitioner to the Division determination approving Co-Op Mining Company's Significant Revision to extend its mining operations into the Tank Seam. This seam is located above the existing seam being mined and within the existing permit area of the Bear Canyon Mine."

Record on Appeal 23-29. (Copy reproduced in Appendices to the Water Users' Joint Brief at Tab H, pages 23-29).

The Board held formal hearings pursuant to that notice on October 25, 1994, and November 17, 1994. Record on Appeal at pages 86-269 and 534-706. The Water Users' pleadings provided notice to Co-Op, the Division, and the Board that the Water Users

sought to address the hydrological effects of mining in the Blind Canyon Seam as part of its appeal of the determination to allow mining in the Tank Seam. The Division and Co-Op made motions at the beginning of the hearing to limit the evidence in this regard. Co-Op, relying on the doctrine of collateral estoppel, moved the Board to exclude any evidence of adverse impacts to Birch and Big Bear Springs previously presented by Water Users during the renewal proceeding for Co-Op's permit in 1991. Record on Appeal at 42-49. The Board denied that motion. Record on Appeal at 114. Counsel for both Co-Op and the Division also made motions to exclude evidence not relevant to the CHIA issues concerning the significant permit revision; the Board took those objections under advisement and received the Water Users' evidence. Record on Appeal at 172 and 235. The Water Users argued that the Tank Seam must be considered within the broader context of the mining operations of Co-Op at the Bear Canyon Mine, which includes the Blind Canyon Seam, and so it was.

The Board granted the Water Users the opportunity to provide testimony to lay a foundation for issues that relate to current mining activities and as existing mine activities may impact on the relationship to mining in the Tank Seam. Record on Appeal at 114.⁵ Thereafter, all participants proceeded on the specific basis of the Board's ruling that the scope of the

⁵See Addendum at Tab 6, which consists of Record on Appeal Pages 86, 113-15, 168-73, 233-36 (copies, respectively, of the Board's Hearing Transcript, cover sheet for 10/25/94, T. 28-30, T. 83-88, and T. 148-151) (Transcript pages regarding colloquies about the CHIA evidence).

proceeding about the Tank Seam permit revision would include--not exclude--foundational testimony about the hydrological impacts, if any, on the springs from mining in the Blind Canyon Seam. Record on Appeal at 113-14.

On June 13, 1995, the Board issued its Order (the "Order") in which it concluded that the Division's approval of the Significant Permit Revision on the Tank Seam should be affirmed.⁶

Ignoring all context and indeed everything they told the Board, the Water Users now bring this "about-face" appeal to the Supreme Court. Their appeal must fail, however, because the Board's Order in this matter, which is reprinted verbatim in the next section of this Brief, falls well within its broad jurisdiction over the CHIA issues related to the permit revision.

IV. STATEMENT OF FACTS

In its Order dated June 13, 1995 (Record on Appeal at 789-812) (copy reproduced in the Appendices Water Users' Joint Brief at Tab N), the Board made fifty-three detailed, well-

⁶The Board heard a great deal of technical hydrological evidence, which is marshalled in the Statement of Facts, infra. For a sample of that evidence, see the attached Addendum at Tabs 3, 4, and 5, consisting, respectively of: Record on Appeal Page 486: Figure 2-4 entitled, "Generalized Block Diagram Showing Occurrence of Groundwater"; Record on Appeal Pages 390, 427-29, 447-49: Selected pages, including the "Conclusions" section from Board hearing Exhibit C, entitled, "Probable Hydrologic Consequences of Mining at Bear Canyon Mine, Emery County, UT" prepared by Earthfax Engineering, Inc." (April 30, 1993); and Record on Appeal Pages 461, 529-31: Selected pages, including the "Conclusions and Recommendations" section from Board hearing Exhibit D, entitled, "Revised Hydrogeologic Evaluation of the Bear Canyon Mine Permit and Proposed Expansion Area" prepared by Earthfax Engineering, Inc." (April 26, 1993).

reasoned Findings of Fact, eleven Conclusions of Law and an Order. The verbatim text of Board's Order--with the portions now challenged by the Water Users underlined to help the Court view those findings in the overall context--reads as follows:

"A. Introduction.

"1. The Water Users in this proceeding are appealing the determination of the Division of Oil, Gas & Mining (the "Division") to grant Co-Op Mining Company ("Co-Op") a significant revision to its mining permit under the Utah Coal Mining and Reclamation Act, Utah Code Ann. § 40-10-1 et seq.

"2. The significant revision to Co-Op's mining permit would allow Co-Op to mine a coal seam known as the Tank Seam within Co-Op's existing Bear Canyon Mine in Emery County, Utah. The Tank Seam is located approximately two hundred vertical feet above Co-Op's existing coal mining operations, which are currently being conducted in the Blind Canyon coal seam in the Bear Canyon mine.

"3. Water Users North Emery Water Users Association, Huntington-Cleveland Irrigation Company and Castle Valley Special Services District (collectively the "Water Users") are engaged in the collection and distribution of culinary and irrigation water to users in the general vicinity of the Bear Canyon mine.

"4. The Water Users generally contend that Co-Op's existing and proposed mining operations have negatively affected the quantity and quality of water flow from two springs, Birch Springs and Big Bear Springs. Birch Spring is managed by and provides water for the water systems of Water Users Huntington-Cleveland Irrigation Company and North Emery Water Users. Hearing Transcript (hereinafter cited as "T. __.") at 40.⁷ Big Bear Spring is managed by and provides water for the water system of petitioner Castle Valley Special Service District. T. 74-76.

"5. The Division approved Co-Op's Application for a Significant Revision to permit mining in the Tank Seam by a decision and accompanying Technical Analysis dated

⁷ The Transcript for the two-day Board hearing, found in the Record on Appeal at 86-354 and at 534-706, is itself paginated from 1-442. The "T." cites in the 6/13/95 Order are to that original pagination supplied by the Court Reporter.

July 21, 1994.

"6. The Water Users timely appealed the Division decision on August 22, 1994, and requested that the Board of Oil, Gas & Mining (the "Board") either reverse the Division's approval or, in the alternative, require Co-Op to provide replacement water supplies to the Water Users at Co-Op's sole expense.

"7. The Board conducted an extensive formal evidentiary hearing in this matter on October 25, 1994 and November 17, 1994, and additionally considered post-hearing memoranda filed by the parties.

"8. At the evidentiary hearing, the Water Users presented testimony by certain of its employees and officers concerning the history and development of Birch and Big Bear Springs, and historic flow rates of the springs. The Water Users also presented expert testimony by Mr. Bryce Montgomery, a consulting geologist, about the alleged impacts of Co-Op's mining activities on the quantity and quality of flows from the springs, and the geologic mechanisms by which such impacts might occur.

"9. Co-Op presented evidence in rebuttal by its expert consultants that all water encountered within the Bear Canyon mine was for a variety of reasons hydrologically separate from Big Bear and Birch Springs. Co-Op's experts also testified that the Tank Seam, the area which it sought to mine pursuant to its application for a Significant Permit Revision, was essentially dry and not in any way linked to the disputed aquifer(s).

"10. The Division also presented testimony by Division hydrologist Tom Munson and Division permit supervisor Darron Haddock concerning Co-Op's application and associated hydrologic studies.

"B. Area Geologic Description.

"11. The Bear Canyon Mine is located near the eastern margin of the Wasatch Plateau Coal Field in Bear Creek Canyon, a tributary to Huntington Canyon, in Emery County, Utah. Exhibit D, p. 1-2. In the Bear Canyon mine, coal is currently removed from two generally horizontal seams within the Blackhawk Formation, the Blind Canyon Seam and the Hiawatha Seam. Id. at p. 2-4. Co-Op began operations at the mine in 1981. T. 168.

"12. The Tank Seam, which Co-Op seeks to mine pursuant to the disputed application for Significant Permit

Revision, is also located within the Blackhawk formation, 220 to 250 vertical feet above the Blind Canyon seam. Id. at p. 2-6.

"13. In the vicinity of the Bear Canyon mine, the stratigraphic sequence from the surface downward includes the North Horn Formation, the Price River Formation, the Castlegate Sandstone, the Blackhawk Formation, the Star Point Sandstone, and the Mancos Shale. Exhibit C, Table 2-4.

"14. In the vicinity of the mine, groundwater is contained within the Star Point sandstone. The Star Point sandstone is composed of three separate members: the upper member is the Spring Canyon member, the middle member is the Storrs member; and the lower member is the Panther member. T. 105-106.

"15. Birch Springs is located on the east side of Highway 31 in Huntington Canyon between Bear Canyon and Trail Canyon. Exhibit 1; T. 39. Big Bear Spring is located on the north side of Bear Canyon approximately one half mile from Co-Op's mine portal into the Blind Canyon seam. T. 77-78. Neither spring is located within the permit area. Exhibit C, p. 2-9.

"16. The two springs both issue from the Panther member of the Star Point sandstone where it contacts the Mancos shale. The Mancos shale is impervious to water and acts as a floor to hold the groundwater above it in overlying formations. T. 105.

"C. Disputed Hydrologic Issues.

"17. Water Users called as an expert witness Mr. S. Bryce Montgomery, a consulting professional geologist, with experience in groundwater hydrology. T. 99-100.

"18. Mr. Montgomery's basic theory of the hydrology of the area was based upon the concept of a regional aquifer. The base of this aquifer is the level at which the Panther member of the Star Point sandstone contacts the impermeable Mancos shale. It is at this level that Birch and Big Bear Springs issue forth. T. 106. Mr. Montgomery testified that the aquifer has a potentiometric surface (the level below which the aquifer is fully saturated) that slopes upward to the north toward Gentry Mountain. T. 106. As the potentiometric surface slopes upward to the north, Mr. Montgomery posited that it reached up into the Blackhawk formation which contains the coal beds, and where it is intercepted by coal mining. T. 106.

"19. Mr. Montgomery testified that groundwater in this aquifer flows not only laterally through the pervious sandstone beds, but also vertically downward through the strata by means of extensive faulting in the area. T. 106-107. Birch and Big Bear Springs, along with the Co-Op mine, are located between two large faults known as the Pleasant Valley Fault and the Bear Canyon fault. T. 107; Exhibit 8.

"20. Mr. Montgomery's conclusion about the effects of Co-Op's mining was that the north portion of Co-Op's mining in the Blind Canyon seam had intercepted the potentiometric surface of the regional aquifer. He testified that water that would normally flow in its natural course down through the bedding and the fracture system to discharge naturally from the subject springs was instead being intercepted by coal mining and conveyed out of the groundwater system. T. 122, 141. This would in turn reduce the amount of water in storage for the springs, and negatively affect their flow for many years. T. 122.

"21. Mr. Montgomery also testified about what he considered to be anomalous flows from the subject springs caused by Co-Op's alleged dumping of surplus water in the south end of the mine, demonstrating a linkage between the mine workings and the springs. T. 147-148. Mr. Montgomery testified that this water carried or picked up calcium sulfate, resulting in the anomalous levels of calcium and sulfates shown for 1991 by Exhibit 18. T. 148.

"22. Co-Op called as expert witnesses Mr. John D. Garr and Mr. Richard B. White, respectively a consulting geologist and a consulting hydrologist with Earthfax Engineering ("Earthfax"). Earthfax was hired by Co-Op to revise the hydrologic characterization of the Bear Canyon mine and the Statement of Probable Hydrologic Consequences ("PHC") for the mine. T. 200.

"23. Earthfax's activities included the drilling of four in-mine monitoring wells downward from the Blind Canyon seam to the Mancos shale, with hydrologic testing of each of the three members of the Star Point sandstone. T. 201.

"24. Mr. Garr disputed Mr. Montgomery's testimony concerning the existence of a regional aquifer, testifying that more site-specific data led him to reach a different conclusion. T. 202.

"25. Mr. Garr testified that there are three separate aquifers below the mine, each with a separate

piezometric surface and each separated and confined by shale interbedding within the Star Point sandstone. T. 208-209. He concluded that the confinement of the aquifers, particularly in the northernmost drill hole, suggested that the recharge for the aquifers supplying the springs is miles to the north at a higher elevation, rather than in the Co-Op area. T. 209, 211, 261, 288-289.

"26. Mr. White testified that the recharge area was far to the north of the mine in a "shatter zone" of fractured strata where water there would percolate easily downward into the Star Point sandstone. T. 312. The significance of this zone was that the recharge area for Big Bear and Birch springs in the Star Point sandstone would be lower than the mine, and not subject to being affected by it. T. 312-313, 322-326, 339-340.

"27. Both Mr. Garr and Mr. White concluded that any water being intercepted by mining in the Blind Canyon seam is a confined aquifer within the uppermost Spring Canyon member of the Star Point sandstone, which due to the confinement of the aquifers is separate from the source of the springs. Exhibit C, p. 2-33; T. 251, 255-256, 284, 288-289. They testified that because the Panther member, which is the source of water to both Birch and Big Bear springs, is hydrologically disconnected from the Spring Canyon member, any aquifer in that member encountered while mining would not affect spring flow. T. 358-359, 362.

"28. Both Mr. Garr and Mr. White testified that water being encountered in the Blind Canyon seam generally represented perched aquifers, rather than the interception of the regional aquifer posited by Mr. Montgomery. T. 223, 285. Relying on a United States Geologic Survey report concerning mine dewatering in the area, Mr. Garr testified that the rate of natural downward flow into the regional aquifer is unlikely to be affected by the interception of perched aquifers. T. 223.

"29. Mr. Garr and Mr. White testified that the location of the Blind Canyon fault was highly significant to the issue of whether Co-Op's mining in the Blind Canyon seam is affecting the flow of Birch Springs. Birch Springs is actually 800 feet to the west of the Blind Canyon fault, so the fault lies between the mine and the springs. T. 118, 212, 293-294. Mr. Garr testified that if groundwater were moving from the mine into the fault (which lies between the mine and Birch Springs) the water would either be stopped by the fault or the fault would act as a conduit for the water to emerge at

the surface. T. 213, 266. Because no spring exists where the Blind Canyon fault intersects the surface, Mr. Garr concluded that there was no connection between groundwater encountered in the mine and Birch Springs. T. 213, 266-267.

"D. Hydrologic Effect of Mining In The Tank Seam.

"30. There was substantial legal dispute between Co-Op and the Water Users concerning the scope of the Board's review of the probable hydrologic consequences of mining. Co-Op argued that the only factual issue that the Board should consider was whether mining in the Tank Seam would cause material damage to the hydrologic balance. The Water Users argued that the Significant Permit Revision would allow the Bear Canyon mine to remain in operation, and would allow mine dewatering to continue. They contended the Board is therefore required to consider the possible hydrologic impact of all mining in the Bear Canyon mine at this time, rather than the impact only of mining the Tank Seam.

"31. As more fully set forth in the succeeding paragraphs, the Board finds that, based upon the evidence, Co-Op's proposed mining in the Tank Seam will not cause material damage to the hydrologic balance.

"32. The Water User's expert Mr. Montgomery admitted that no appreciable groundwater exists in the Tank Seam, and that the potentiometric surface of the principal aquifer was below the Tank Seam. T. 112, 123-125, 162. This testimony was corroborated by Co-Op's witness Mr. Garr, who testified that any aquifer was well below the Tank Seam. T. 265.

"33. Mr. Montgomery incorrectly assumed that there would be an internal ramping system within the mine between the Tank Seam and the area of the Blind Canyon seam presently being mined. T. 113, 162. This assumption led Mr. Montgomery to conclude that the interval between the Tank Seam and the Blind Canyon Seam would be affected. T. 113. Mr. Montgomery also posited that contaminants deposited within the mine workings in the Tank Seam, and outside from road salt, would be conveyed downward to the base of the hydrologic system over time.

"34. In fact, Co-Op will transport coal from the Tank Seam by means of a separate portal, and then into a vertical shaft back into the Blind Canyon seam to Co-Op's existing conveyor system. T. 174-176. This shaft intersects the south area of Co-Op's mine workings, in an area that is entirely dry. T. 175. The area

underlying the access road is also dry. T. 175. This shaft encounters no water seepage anywhere in the hole between the Tank Seam and the Blind Canyon seam. T. 274.

"35. Mr. Montgomery also testified that the removal of coal from the Tank Seam would eventually cause the collapse of overlying beds, increasing jointing and fracturing and furthering the conveyance of water and potential contaminants downward. T. 113.

"36. Mr. Montgomery additionally testified that, although the Tank Seam was above the regional aquifer, it might encounter small perched aquifers, and interrupt the flow downward of water contained in those aquifers through fractures, thereby reducing supply to the regional aquifer. T. 124-130, 162-163.

"37. The Board notes the inconsistency between Mr. Montgomery's testimony that mining would eventually cause additional fracturing, thus increasing downward flows, with his testimony that mining would limit downward flows.

"38. Co-Op's witnesses presented evidence rebutting Mr. Montgomery's testimony that mining within the Tank Seam could have negative hydrologic effects. In order to test whether water existed within the Tank Seam, Co-Op conducted a testing program involving the drilling of eight holes upward from the Blind Canyon seam into the Tank Seam at various locations. T. 171, 179. All but one of these drill holes was essentially dry, although one hole encountered flows of approximately a half gallon per minute. T. 172, 283. Similarly, the eight foot diameter bore hole between the two levels was also dry. T. 283.

"39. Because there is little water in the Tank Seam, there is little possibility that any contaminants could be carried downward from the Tank Seam into the aquifers supplying the Water Users' springs. T. 285-287, 344. There is no significant recharge to the aquifers coming from the ridge above the mine because it is very narrow and has little flat surface to catch runoff. T. 211, 220-222.

"40. In summary, the evidence establishes that:

- (a) the Tank Seam is essentially dry;
- (b) the Tank Seam is well above the "regional aquifer" theorized by the Water Users;

- (c) no direct connection between any water that might in the future be located in the Tank Seam and the ostensible regional aquifer has been established;
- (d) the surface above the seam has limited recharge potential, further reducing the risk of contaminants being conducted downward.

"41. Based upon this evidence, the Board finds that mining in the Tank Seam will not cause material damage to the hydrologic balance, either through reduction in supply or contamination. Co-Op has satisfied its burden of proof on this issue.

"E. Hydrologic Effect of Mining In the Blind Canyon Seam.

"42. Because the parties devoted a substantial portion of their evidence to the hydrologic effects of mining in the Blind Canyon seam, the Board feels obligated to make findings of fact concerning this issue.

"43. The Board is faced with two differing expert models of the effect of mining in the Blind Canyon seam on aquifer(s). The Water Users' expert, Mr. Montgomery, testified to the existence of a regional aquifer with a potentiometric surface sloping from north to south, with Big Bear and Birch Springs exiting from the aquifer at the contact of the Star Point Sandstone. Mr. Montgomery theorized that the northern portions of Co-Op's mine workings had intersected the potentiometric surface, and that the removal of substantial quantities of this water through mine dewatering had reduced current and future supplies to the Water Users' springs.

"44. Co-Op's experts Messrs. Garr and White instead theorized separate aquifers in the Star Point sandstone rather than a single regional aquifer. They relied upon drilling in the mine that had established the existence of shale tongues interlineated between the three members of the Star Point sandstone. They testified that these shale tongues were generally impervious, and created essentially separate aquifers with separate potentiometric surfaces in each of the three sandstone members. Because the two disputed springs were supplied only from the lowest member, the Panther, any intersection between mining and the potentiometric surface of the separate aquifer in the upper Spring Canyon member would not affect spring flow.

"45. While the Board recognizes that the evidence before it on this issue is not as clear as that concerning mining in the Tank Seam, it is ultimately convinced that Co-Op's hydrologic model is more convincing. As more fully set forth below, the Board believes that Co-Op's model is linked more closely to local conditions, and is supported by radiologic and chemical analyses establishing dissimilarities between mine waters and waters emanating from the two springs.

"46. In preparing the PHC, Earthfax conducted tritium testing of waters encountered in the mine and flows from the two springs. Tritium is an isotope of hydrogen that was released into the earth's atmosphere during open-air nuclear testing in the 1950s and 1960s. Tritium testing can be used to determine the "age" of water, because water that has been underground since before the nuclear era will have only small amounts of tritium, while new water exposed to fallout will have higher levels. T. 287-288.

"47. Tritium testing of water encountered in the mine showed that it was "old" water with low concentrations of tritium, while water from Big Bear Spring had tritium concentrations approximately ten times greater. T. 247, T. 288. This data indicates that Big Bear spring has a source different from the water encountered by Co-Op in the Blind Canyon seam. T. 288. While Mr. Montgomery speculated that higher tritium levels in Big Bear Spring could be caused by water seeping across surface formations prior to being tested, the Board does not find this testimony convincing.

"48. Tritium testing did not rule out similarity between the mine water and waters tested from Birch Spring, as both waters were found to be "old" water. T. 247-248. However, chemical analysis of the mine water and water from the Birch Springs showed chemical dissimilarities between the two waters, particularly in the area of sulfate content. T. 290, 299-300, 304-306; Exhibit C, p. 2-19. The Water Users countered that higher levels of sulfates could be the result of spring water being affected by surface mineralization.

"49. The Board also concludes that the evidence linking declines in flows at the two springs to activities in the mine rather than the extensive drought Utah has suffered in recent years was unconvincing. For example, the Board notes that the Water Users' witness Darrell Leamaster, a civil engineer and District Manager of petitioner Castle Valley, acknowledged that high flows of up to 230-240 gallons per minute from Big

Bear Spring in the 1983-1984 time period were linked to wet weather at the time. T.79, 97. Similarly, Exhibit 15, relied upon by the Water Users, appears to show a response in flow from Big Bear spring to high precipitation in the early 1980s. For Birch Springs, actual flow data was limited to several years. See Exhibit 16; T. 338. Testimony about higher flows when the spring was reworked may lack relevance, since the testimony concerned the high water years of 1983-84. T. 58.

"50. Testimony by the Water Users' witnesses also focused on anomalous flows in Big Bear Spring in 1991, coupled with spikes in sulfates and calcium concentrations. Exhibit 18; T. 147-148. Co-Op's witness Mr. White disputed any causal connection between activities in the mine and these flows. T. 327. The Board does not believe that either side's evidence on this issue is dispositive.

"51. The Water Users attempted, over objection by Co-Op, to present Little Bear Springs as a "control". Little Bear Springs is located across Huntington Canyon from the two subject springs and the Bear Canyon Mine, and so could not be affected by mining activity. The Water Users argued that, although part of the same regional aquifer, it did not show the same decline in flow as Big Bear and Birch Springs, and so was probative of whether flows from the latter two springs had been affected by mining. The Board is convinced by Co-Op's expert testimony that the regional aquifer system in the mine area is complex, and that the hydrology of springs in the area is sufficiently different that they are generally not analogous. T. 208, 215-216. The Board also notes that even the U.S.G.S. report relied upon by Mr. Montgomery cautions against comparisons between springs in the area due to differing geology. T. 216. Accordingly, the Board finds that Little Bear Spring is not useful as a control in this matter.

"52. In summary, the evidence establishes that:

- (a) Tritium analysis establishes that Big Bear spring and water encountered by Co-Op during mining are not of the same age, and thus hydrologically distinct;
- (b) chemical analysis supports, although it alone does not conclusively establish, the conclusion that Birch spring and the mine water are hydrologically distinct;

- (c) the existence of the Blind Canyon fault between the mine and Birch spring would preclude waters encountered in the mine from reaching Birch spring;
- (d) Co-Op's more-localized hydrologic model supports the conclusion waters encountered in the Bear Canyon mine from perched aquifers and/or the Spring Canyon member of the Star Point sandstone are hydrologically distinct from the springs, which issue from the Panther member of the Star Point sandstone.

"53. The Board therefore finds that based upon the evidence before it, Co-Op's mining of the Blind Canyon seam is not likely to cause material damage to the hydrologic balance in the mine area, and is not linked to declines, if any, in spring flows from Big Bear and Birch Springs.

"CONCLUSIONS OF LAW

"1. Pursuant to Utah Code Ann. § 40-10-11(2), Co-Op has the burden of affirmatively demonstrating the following:

- (a) that the permit application is accurate and complete, and that all statutory and regulatory requirements have been complied with;
- (b) that reclamation can be completed as required by law and the proposed reclamation plan; and
- (c) that the assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance has been made by the Division, and the proposed operation of the same has been designed to prevent material damage to the hydrologic balance outside the permit area.

"2. The feasibility of reclamation and the adequacy of Co-Op's reclamation plan, a required showing under Utah Code Ann. § 40-10-11(2)(b), has not been challenged in this proceeding, and is not an issue here.

"3. The Board concludes that the permit application was in fact complete, and that the requirements of the Utah Coal Mining and Reclamation Act and associated regulations have been complied with. The Water Users

argue that the permit application is incomplete, and not in compliance with law, because the document incorporating the Division's determination of Probable Hydrologic Consequences allegedly does not include baseline data. Utah Code Ann. § 40-10-10(2)(c) requires a Division determination of the probable hydrologic consequences of mining operations. Such a determination was in fact made and approved by the Division. See Exhibit C. The Water Users contend that Co-Op's permit application does not comply with Division Rule R645-301-724, which requires baseline information concerning groundwater hydrology, because Table 2-5 of the PHC indicates that flow rates for the subject springs were not measured at the inception of mining. The Board is convinced that this omission is harmless. The Cumulative Hydrologic Impact Assessment (Exhibit D) for the proposed Significant Permit Revision contains the exact baseline information for the flow from these springs that the Water Users claim is absent. Exhibit D, p. 2-17, Appendix D. The absence of this information from one table in the PHC when it is present in another portion of the permit application package is not significant. Utah Code Ann. § 40-10-11(2)(a) has been satisfied.

"4. At the hearing in this matter, the parties disputed whether the possible effects of mining in the Blind Canyon seam should have been considered by the Division in ruling upon the Significant Permit Revision application. Co-Op's application for Significant Permit Revision involved only a proposal to mine the Tank Seam. Co-Op's current operations in the Blind Canyon seam are authorized under the terms of Co-Op's existing permit, which has not been challenged in this proceeding. The principal issue of law before the Board is whether possible negative hydrologic impacts of operations in the Blind Canyon seam should be considered here, or whether only impacts from mining in the Tank Seam may be considered.

"5. If only the subject matter of the Significant Permit Revision application is to be considered, it is clear that Co-Op has met its burden of demonstrating that material damage to the hydrologic balance will not occur from mining in the Tank Seam. The great weight of the evidence showed that the Tank Seam was well above the regional aquifer theorized by the Water Users, that it was essentially dry, and that any effect that such mining would have by either limiting the downward flow of water or allowing contaminants into the hydrologic system was purely speculative.

"6. One significant fact is that even if the Board

were to deny Co-Op's application for a Significant Permit Revision, mining could continue in the Blind Canyon seam under Co-Op's existing permit. The Board therefore does not believe that it is relevant to consider the hydrologic impacts of existing mining in the permit area. Nonetheless, because the bulk of the evidence presented by the parties focused on cumulative impacts of all mining, the Board has made factual findings on this issue. The Board has found that the factual evidence does not support the conclusion that the continuation of Co-Op's previously authorized operations in the Bear Canyon mine will cause material damage to the hydrologic balance.

"7. Co-Op presented a hydrologic model that appears to the Board to better describe local conditions than the model presented by the Water Users. Radiologic and chemical analysis appears to differentiate water found in the mine from water at Big Bear and Birch Springs. The Board simply has not heard convincing evidence that declines in flows at the two springs have resulted from mine dewatering instead of the drought conditions of recent years. The Board therefore concludes that the requirements of Utah Code Ann. § 40-10-11(2)(c) concerning material damage to the hydrologic balance have been satisfied.

"8. At the hearing, the Board took under advisement Co-Op's motion to exclude evidence of damage to the Water Users' springs that took place prior to 1991, the date when Co-Op's mining permit for the Bear Canyon mine was last approved. Co-Op argued that the Water Users were collaterally estopped from raising issues that had been raised and readjudicated before the Board and Division in the 1991 proceeding. The Board has chosen to consider all evidence before it concerning alleged damage to the Water Users' springs, and accordingly denies Co-Op's motion.

"9. The water replacement requirements of 30 U.S.C. § 1309a are not applicable under the circumstances. That statute, which was enacted as part of the Federal Energy Policy Act of 1992, requires the operators of underground mines to replace promptly any water supplies adversely impacted by underground mining operations. The Water Users have failed to prove to the Board as a factual matter that either the quantity or quality of their water has been adversely impacted by mining at the Bear Canyon mine, so the statute may not be applied to Co-Op here.

"10. In addition, the Board does not believe that a permit revision appeal such as this one is the proper

forum for raising the federal statutory water replacement requirement. The Utah legislature has yet to incorporate the water replacement requirement for underground mines into the Utah Coal Mining and Reclamation Act. See Utah Code Ann. § 40-10-1 et seq. The Board questions whether it has jurisdiction under the Utah act to require water replacement pursuant to 30 U.S.C. § 1309a. This proceeding for review of a Division permit decision simply is not the proper forum for the Water Users' water replacement claims.

11. The Board finds that, under the circumstances set forth above, no attorneys fees, costs, or expenses should be awarded in this proceeding pursuant to Utah Code Ann. § 40-10-22(3)(e).

"ORDER

"IT IS THEREFORE ORDERED that Petitioners' appeal is denied, and the Division's action approving Co-Op's Application for a Significant Permit Revision is upheld. No costs, expenses or attorney's fees are awarded.

V. SUMMARY OF ARGUMENT

The Board's jurisdiction under the Utah Coal Act expressly embraces all of the hydrological issues decided by the Board. In the proceedings below, the Water Users expressly argued--correctly--that the Board did have the necessary jurisdiction to resolve the Water Users' CHIA claims, and the Board made findings on the cumulative hydrologic impacts of all mining in the geographic area under study. Therefore, the Board did not err. Now, having lost on the merits, the Water Users assail the Board for deciding the very factual issue which the Water Users demanded that the Board decide. Not only did the Water Users not preserve this jurisdictional issue for appeal, in the proceedings below they advanced the opposite argument. The Board had to resolve the contested facts about cumulative hydrologic impacts set forth above in Findings of Fact 42-53 to

decide this case, so this appeal lacks any merit. Also, the Board properly declined to grant the relief sought by the Water Users under 30 U.S.C. § 1309a where the Board had ruled that the springs used by the Water Users had not been damaged in fact by Co-Op's mine operations.

VI. ARGUMENT

A. The Water Users Did Not Preserve the Right to Appeal the CHIA Issues Raised on Appeal

The Water Users made a strong record below for the proposition that the Utah Coal Act, Utah Code Ann. § 40-10-1 et. seq. (1953, as amended) requires the Division and the Board to consider the cumulative hydrologic impact of Co-Op's request to mine the Tank Seam while continuing to mine in the already permitted Blind Canyon Seam. The Board only did what the law requires. The Utah Coal Act makes clear that the Board had a legal duty to study the cumulative hydrologic impacts from "all anticipated mining in the area," including, but not limited to the mining in the Tank Seam and in the Blind Canyon Seam. The law states:

- (2) The permit application, and the reclamation plan submitted as part of a permit application shall be submitted in the manner, form, and content specified by the division in the rules and shall include the following:

(c) A determination of the probable hydrologic consequences of the mining and reclamation operations, both on and off the mine site with respect to the hydrologic regime, quantity and quality of water in surface and groundwater systems, including the dissolved and suspended solids under seasonal flow conditions, and the collection of sufficient data for the mine site and surrounding areas so that an assessment can be made by the division of the probable cumulative

impacts of all anticipated mining in the area upon the hydrology of the area and, particularly, upon water availability; but this determination shall not be required until such time as hydrologic information on the general area prior to mining is made available from an appropriate federal or state agency. The permit shall not be approved until this information is available and is incorporated into the application.

Utah Code Ann. § 40-10-10(2)(c) (1953, as amended) (emphasis added). The Board listened to the Water Users, and ultimately agreed that such CHIA evidence should be received as foundational evidence so the Board could determine whether the Division had done a proper CHIA on the Significant Permit Revision requested for the Tank Seam.

As demanded by the Water Users, the Board made detailed subsidiary factual findings in the CHIA analysis about whether mining in the Blind Canyon Seam contributed to adverse cumulative hydrological impacts at the springs. While the ultimate factual findings were not the ones desired by the Water Users, losing on the merits is just a risk of litigation. They, least of all, can now be heard to claim that it was error for the Board to make CHIA findings on that subject matter. The Water Users expressly demanded that the Board make factual findings on their evidentiary contentions about the alleged adverse cumulative hydrological impact of mining in the Tank Seam and the Blind Canyon Seam in relation to the two springs. Indeed, if they meant what they said to the Board, had the Board not made any CHIA-related findings about the Blind Canyon Seam, surely the Water Users would have filed an appeal to this Court claiming that the Board had a legal duty to do so. Now, flatly

repudiating their own argument below, the Water Users argue that the Utah Coal Act prevents the Board from assessing cumulative impacts from all mining in the area and instead requires that the Board artificially segment CHIA analysis.

Of course, the Water Users cannot have it both ways, and, in any case, the law on this point quite clearly is at odds with the Water Users' appeal. Section 40-10-11(2)(c) of the Utah Coal Act expressly requires the Division and the Board to consider cumulative hydrologic impacts in cases like this one, as follows:

(2) No permit or revision application shall be approved unless the application affirmatively demonstrates and the division finds in writing on the basis of the information set forth in the application or from information otherwise available which will be documented in the approval and made available to the applicant, that:

(c) The assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance specified in subsection 40-10-10(2)(c) has been made by the division and the proposed operation of same has been designed to prevent material damage to hydrologic balance outside the permit area.

Utah Code Ann. § 40-10-11(2)(c) (1953, as amended) (emphasis added). Thus, the Water Users effectively ask this Court to hold that it was error for the Board to do what (a) the Water Users asked the Board to do and (b) what the Board had an affirmative duty to do.

It matters not that the Division and Co-Op attempted, without success, to limit the Water Users' evidence at the hearing, because those objections were overruled by the Board. In response to each objection by the Division and Co-Op, the

Water Users would restate their basis for providing testimony and evidence concerning their theory of the case; and in each instance, the Board allowed the evidence and the testimony to be admitted. As the Board noted, "because the bulk of the evidence presented by the parties focused on cumulative impacts of all mining, the Board has made factual findings on this issue."

Record on Appeal at 809 (¶ 6) (emphasis added). Thus, it was not error, or, at most, it was harmless error, for the Board to have observed in dicta in the immediately preceding sentence of the Order that the Board, "does not believe that it is relevant to consider the hydrologic impacts of existing mining in the permit area." Id.

The purpose of the hearing was to consider the CHIA in relation to the Significant Permit Revision on the Tank Seam. The record below makes clear that the Board yielded to the Water Users' demand that the Board make factual findings regarding the effect of the existing mining operations in the Blind Canyon Seam on the overall CHIA. The bottom line is that the Board, at the Water Users' urging, correctly did make the appropriate CHIA findings when the Board stated in the same paragraph: "The Board has found that the factual evidence does not support the conclusion that the continuation of Co-Op's previously authorized operations in the Bear Canyon Mine [i.e., the operations in the Blind Canyon Seam] will cause material damage to the hydrologic balance." Record on Appeal at 809 (¶ 6).

The Board quite sensibly insisted that the Water Users tie their evidence concerning the regional hydrology and the

cumulative hydrological impact of mining in the entire permit area to the Water Users' challenge to the Tank Seam permit revision. After all, that was what the hearing was supposed to be about. Chairperson Lauriski, speaking for the Board, stated:

. . . However, I want to point out that in the Board's deliberations, that the issue before us today relates to the significant revision of the mining permit issued to Co-Op in July of this year, and the Board in its deliberations determined that we would only consider evidence as it relates to the impact of mining of the Tank Seam. However, if petitioners need to lay foundation by raising issues that relate to current mining activities and as it impacts, they can show that relationship as it impacts, as it might impact the Tank Seam mining, then we will consider those issues as relevant to this case. Okay?

Just for the record, I want to read in how this was noticed, so that everybody understands the frame work with which we'll conduct this hearing. The purpose of this proceeding will be for the Board to consider the objection of the petitioner to the Division for determination of approving Co-Op Mining Company's significant revision to extend its mining operations into the Tank Seam. That also is what appears in the petitioner's motion for this hearing. And so that's how we're going to conduct the hearing, by narrowing that focus as it relates to the Tank Seam and impact of mining on that Tank Seam. Okay.

With that, we'll move into the merits of this case and I would ask counsel if they have any opening arguments they wish to present.

Record on Appeal at 114 (emphasis added).

In the proceedings below, contrary to the position they urge on appeal, the Water Users correctly argued that the Utah Coal Act, and the implementing regulations promulgated by the Division, require that the Division and the Board make CHIA findings before approving a significant permit revision. Before the evidentiary hearing, the Water Users stated:

The PHC [Probable Hydrologic Consequence] and the

Cumulative Hydrologic Impact Assessment ("CHIA") both fail to recognize the adverse impact of Co-Op's mining and specifically mine dewatering activity on regional aquifers that feed the Big Bear and Birch Springs, and thus the CHIA fails to meet the minimum requirements of R645-301-729.100 in not recognizing or mitigating the material damage to hydrologic balance outside the permit area.⁸

The Utah Coal Program regulation cited in the preceding paragraph by the Water Users reads as follows:

729. Cumulative Hydrologic Impact Assessment
(CHIA)

729.100. The Division will provide an assessment of the probable cumulative hydrologic impacts of the proposed coal mining and reclamation operation and all anticipated coal mining and reclamation operations upon surface- and ground-water systems in the cumulative impact area. The CHIA will be sufficient to determine, for purposes of permit approval whether the proposed coal mining and reclamation operation has been designed to prevent material damage to the hydrologic balance outside the permit area. The Division may allow the applicant to submit data and analyses relevant to the CHIA with the permit application.

R645-301-729.100 (1996) (emphasis added). Likewise, in their post-hearing briefs to the Board, the Water Users demanded that the Board make broad CHIA findings, as follows:

**"POINT I
"THIS BOARD HAS JURISDICTION AND AUTHORITY
TO REVIEW THE PERMIT AND APPLICATION OF CO-OP**

"The jurisdiction of this Board to administratively review Co-op's Permit as urged by Petitioners [i.e., the Water Users] and the scope of its review in conducting such administrative review is set forth in Utah Ann. § 40-10-14(3) and R645-300-200 of the Administrative Rules "Administrative and

⁸ See, e.g., "Appeal of Division Determination to Approve Significant Revision to Permit to Allow Mining of Tank Seam by Co-Op Mining Company," filed by the Water Association and the Irrigation Company, Record on Appeal at page 7, paragraph 14 (a copy of which is reproduced in the Appendices to the Water Users' Joint Brief at Tab F, page 7).

Judicial Review of Decision on Permits." Specifically R645-300-211 of this chapter of the rules states:

"211. General. Within 30 days after an applicant or permittee is notified of the decision of the Division concerning a determination made under R645-106, an application for approval of exploration required under R645-200, a permit for coal mining and reclamation operations, a permit change, a permit renewal, or a transfer, assignment, or sale of permit rights, the transfer, assignment, or sale of permit rights, the applicant, permittee, or any person with an interest which is or may be adversely affected may request a hearing on the reasons for the decision, in accordance with R645-300-200.

"Petitioners NEWUA and Huntington-Cleveland, as owners and purveyors of drinking water from Birch Spring, are clearly persons with an interest which is or may be adversely affected. This regulation by establishing current or potential adverse affect caused by the Division determination on a permit purposefully gives this Board a wide scope of both jurisdiction and authority in reviewing permit matters appealed to it. Nowhere in the Regulations is the Board's review limited to any specific aspect of a permit or revision to a permit. The dynamic nature of coal mining and its affects on the environment clearly require this wide review authority. [Footnote 1 starts at this point, and reads]: "For example, during the last Permit approval of Co-op's Bear Canyon Mine, the mine was relatively dry and not discharging any water. Since that time, the mine has encountered significant water, and currently discharges between 300 - 500 gpm. Never before has the Bear Canyon Mine permit been reviewed while the mine was encountering and discharging such significant amounts of water. [End Footnote 1]. One obvious example of adverse affect on NEWUA and Huntington-Cleveland is the prolonged life of the Bear Canyon Mine and its material damage to the hydrologic balance outside the permit area which will occur if the substantial revision to the Permit is upheld.

"Thus, under the regulations governing this Board's review, if the Appellants are being adversely affected by Co-op's permitted mining activity or will be adversely affected by the substantial revision sought by Co-op, this Board has jurisdiction and authority to act on the determination of the Division to grant a substantial revision to Co-op's Permit."

"Post-Hearing Memorandum of North Emery Water Users Association

and Huntington Cleveland Irrigation Company," Record on Appeal at 732, 736-37 (a copy of which is reproduced in the Appendices to the Water Users' Joint Brief at Tab K, at pages 5-6) (emphasis added).

An identical argument in support of the Board's broad jurisdiction to make CHIA findings was advanced below by the Service District, as follows:

"I. JURISDICTION AND RELATED ISSUES

"CVSSD hereby incorporates the arguments set forth in Co-Petitioners NEWA and Huntington-Cleveland's Memorandum concerning the ability of the Board to jurisdictionally review all aspects of the Co-op operation. [i.e., the text just quoted above]. CVSSD is an affected entity pursuant to the Administrative Rules and the Tank Seam is but one portion of the total operation of Co-op. The failure to review the cumulative impacts of revisions to permits or extensions to permits creates risks of a segmented view of the overall actual impacts and a piecemeal review process. Since some of the major water sources of this region are at stake, this cannot be allowed.

.

"Not only has Co-op failed to demonstrate its ability to locate alternate water sources or to replace the water sources of Petitioners, it has failed to demonstrate a finding of no material damage to the existing hydrological balance outside the permitted area. The Board must force Co-op to accomplish the legislative and administrative tasks required of it and has the jurisdiction to do so.

II. PRIOR PROCEEDINGS

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"The probable hydrologic consequences ("PHC") and the cumulative hydrologic impact assessment (CHIA") are designed to function as evolving processes, in which the cumulative effects of mining on hydrologic resources are detailed, explored and explained on an updated and ongoing basis. By purposefully segmenting the Tank Seam from the remainder of their operation, this burden has not been

met by Co-op. Thus, further data collection is required before any approval may be made.

.

"Post-Hearing Memorandum of Castle Valley Special Service District," Record on Appeal at 774, 775-78 (a copy of which is reproduced in the Appendices to the Water Users' Joint Brief at Tab M, at pages 2-5) (emphasis added).

Not only did the Water Users not timely preserve the CHIA issue on the Blind Canyon Seam for appeal, the Water Users are taking a position on appeal regarding CHIA which is 180 degrees different from the position they took before the Board. Thus, even if there was error--and there was not--the Water Users cannot now complain that the Board received and considered the broad range of evidence deemed relevant by the Water Users themselves.

When the Board ruled, the Water Users succeeded in convincing the Board that it should decide the CHIA issues about the Blind Canyon Seam raised by the Water Users. The Water Users were correct when they argued that, for purposes of the Significant Permit Revision on the Tank Seam, the cumulative hydrologic impacts in that area included their right to lay a foundation about the effect of mining not only in the Tank Seam, but also mining in the Blind Canyon Seam. After they were allowed to lay that foundation, the Water Users nonetheless lost on the Board's CHIA factual finding that Co-Op's mining in Blind Canyon Seam did not have any material impact on the two springs operated by the Water Users. Because they lost on the facts, the

Water Users now desire to delete Findings of Fact 42-53 and Conclusions of Law 1 and 3-10 (i.e., the underlined portions of the June 13, 1995 Order which are quoted verbatim above in the section of this Brief entitled "Statement of Facts").

After the Water Users lost on the CHIA facts, the Water Users suddenly changed their views on the law. Only after they lost did the Water Users ask the Board to modify the Order. The Water Users suddenly wanted to delete the type of CHIA findings about the Blind Canyon Seam which they had, for so long, demanded that the Board make. See "Request for Re-Hearing and Modification of Order Dated June 13, 1995, By Utah Board of Oil, Gas and Mining," Record on Appeal at 817-18 (a copy of which is reproduced in the Appendices to the Water Users' Joint Brief at Tab O, pages 5-6). The Board quite sensibly said no. Order Denying Request to Re-Hear and to Modify Order Dated 6/13/95," Record on Appeal at 876-77 (a copy of which is reproduced in the Appendices to the Water Users' Joint Brief at Tab R, pages 1-2).

A party in a coal case, as in any case, must make a timely objection to preserve it for appeal. In this case, that did not happen. A party cannot maintain throughout a formal adjudicatory hearing about a coal permit that the Board must make detailed CHIA findings about the alleged cumulative hydrologic relationship between the Blind Canyon Seam, the Tank Seam and two springs, and then, after convincing the Board on the scope of its jurisdiction but losing on the factual merits of the CHIA dispute, predicate an appeal to the Supreme Court on an eleventh hour post-Order motion to reconsider the jurisdictional issue.

This conclusion is especially true when the too-late post-Order motion to reconsider is itself flatly contradicted by the party's own well-established legal position at trial.

In short, the Water Users' appeal is based upon the fact that the Division and Co-Op objected, without success, to their hydrologic evidence about the Blind Canyon Seam, and that the Board required the Water Users to tie that foundational evidence about alleged impacts from the Blind Canyon Seam to the scope of the contested Significant Permit Revision on the Tank Seam. The Water Users apparently reason that the entire two-day hearing was irrelevant and that the Board had no factual basis before it on which to decide the Water Users' challenge to the CHIA. Notably, the Water Users have not claimed on appeal that the record lacks substantial evidence to support the Board's findings.

B. There is No Merit to the Water Users' Appeal on the Three CHIA-Related Issues

Even if the Court finds that the Water Users preserved their right to appeal, the Water User's challenge to the Board's jurisdiction over CHIA issues related to coal mines has no basis in law. Indeed, the Utah Coal Act, at Utah Code Ann. § 40-10-2, entitled "Purpose," states:

It is the purpose of this chapter to:

(1) Grant to the board and division of oil, gas, and mining the necessary authority to assure exclusive jurisdiction over non-federal lands and cooperative jurisdiction over federal lands in regard to regulation of coal mining and reclamation operations as authorized pursuant to Public Law 95-87.

Id. The CHIA findings made by the Board in this matter fall

squarely within that express grant of jurisdiction. The reference in the above Utah statute to federal "Public Law 95-87" is a reference to the Federal coal law, the Surface Mine Reclamation and Control Act of 1977, now codified at 30 U.S.C. 1201 et seq. ("SMCRA"). The Utah Coal Act was adopted by the Utah Legislature so that Utah could become a federally-approved "primacy" state for abandoned mine reclamation and active mine permitting and enforcement. In approving the Utah Coal Program, the U.S. Department of the Interior's Office of Surface Mining and Reclamation Enforcement ("OSM") has determined that the Utah Coal Program is no less effective than SMCRA.⁹

The Board is not aware of any prior cases where anyone has challenged the Board's broad jurisdiction to make appropriate CHIA findings for coal mines under its jurisdiction. However, the case of Natural Resources Comm'n of the State of Indiana v. Amax Coal Co., 638 N.E.2d 418 (Ind. 1994) is instructive on how this case should be analyzed because Indiana, like Utah, is a SMCRA "primacy" state.

In Amax, the Indiana Department of Natural Resources conditioned the issuance of coal companies' strip mining permits upon demonstration that certain dewatering plans would not harm adjacent landowners. The coal companies in Amax challenged those conditions, asserting that Indiana lacked the jurisdiction to

⁹ The Utah Coal Program, consistent with SMCRA, regulates not only surface mining (sometimes called strip mining), but also impacts on the surface from underground coal mining and reclamation activities. See Utah Code Ann. § 40-10-3(18) (1953, as amended) (definition of "surface coal mining operations").

issue those conditions to protect ground water in the area of the mining. In rejecting that jurisdictional challenge, the Indiana Supreme Court analyzed CHIA legislation similar to the CHIA aspects of Utah's Coal Program. The Amax decision will be quoted at some length:

Congress acknowledged that coal mining operations contribute significantly to the energy requirements of the United States, and that surface coal mining is an appropriate method of obtaining the natural resource. Recognizing the negative environmental impacts and the public health and safety hazards associated with surface mining operations, Congress adopted the federal Surface Mining Control and Reclamation Act of 1977 (F-SMCRA), 30 U.S.C.A. §§ 1201-1328. The Indiana Surface Mining Control and Reclamation Act (I-SMCRA), Indiana's counterpart to F-SMCRA, similarly recognizes the need to protect society and the environment, as well as to assure the rights of surface land owners and others, by preventing and minimizing the adverse effects of surface mining operations. I.C. § 13-4.1-1-2 (West 1990). I-SMCRA is codified at I.C. § 13-4.1.

Clearly a state may, in the exercise of its police powers, impose restrictions upon certain types of land use. The United States Supreme Court has held restrictions on land use are constitutional, when the regulation "find[s] ... justification in some aspect of the police power, asserted for the public welfare." Village of Euclid, Ohio v. Ambler Realty Co., 272 U.S. 365, 387, 47 S.Ct. 114, 118, 71 L.Ed. 303, 310 (1926). The validity of I-SMCRA is not in question. Rather, the appellees contend (and the trial court agreed) that I-SMCRA does not convey to the DNR the authority to regulate ground water use.

EXPRESS PROVISIONS

In providing primary authority to the DNR for its implementation, I-SMCRA includes numerous express provisions which directly apply to water resources protection and the prevention of offsite damage. For instance, a permit application shall include:

A determination of the probable hydrologic consequences of surface coal mining and

reclamation operation, both on and off the mine site, with respect to the hydrologic regime, quantity and quality of water in surface and ground water systems ... and the collection of sufficient data for the mine site and surrounding areas so that an assessment can be made of the probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area and particularly upon water availability.

I.C. § 13-4.1-3-3(a)(11) (West Supp.1993). Before the DNR issues a permit for surface coal mining, a surface coal mine operator must submit a reclamation plan as part of the permit application. I.C. § 13-4.1-3-4(a) lists the required contents of that plan, including sections affecting ground water:

Each reclamation plan submitted as part of a permit application ... shall include, in the degree of detail necessary to demonstrate that reclamation required by this article can be accomplished:

- (15) A detailed description of the measures to be taken during the surface coal mining and reclamation process to assure the protection of:
 - (A) the quality of surface and ground water systems, both onsite and offsite, from adverse effects of the mining and reclamation process;
 - (B) the rights of present users to that water; and
 - (C) the quantity of surface and ground water systems, both onsite and offsite, from adverse effects of the mining and reclamation process or to provide alternative sources of water where such protection of quantity cannot be assured.

I.C. § 13-4.1-3-4(a) (West Supp. 1993). A DNR regulation, 310 IAC 12-3-32, specifies the nature and content of the information required in the permit application. The DNR's technical staff reviews the proposed mining operations and the expected consequences of the permittee's proposed mining operations before approving the permit. Before the DNR issues a surface coal mining permit, the permit applicant must submit a plan to assure the protection of ground water systems.

The statute also places the burden upon an applicant for a surface coal mining permit to establish the existence of certain conditions, including conditions aimed at preserving the hydrologic balance in the area surrounding that being mined:

The applicant has the burden of establishing that his application complies with all the requirements of this article. The director may not approve a permit or revision application unless the application affirmatively demonstrates and the director finds that:

(3) the assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance specified in [I.C. §] 13-4.1-3-3 has been made by the director and the proposed operation thereof is designed to prevent material damage to the hydrologic balance outside the permit area....

I.C. § 13-4.1-4-3(a) (West Supp.1993). [Footnote 6 reads: The parallel federal provision is at 30 U.S.C.A. § 1260.] The reclamation plan requirement demonstrates the government's commitment to ensure that damage to the environment and to adjacent lands will be minimal. The permit application procedure also requires an assessment of the effects of mining operations on the hydrologic balance both within and outside the permit area.

.

The many statutes regarding the control over surface coal mining and the use of ground water indicate that the legislature, concerned with the affects surface coal mining has, wanted the DNR to govern such operations. In turn, the DNR promulgated many regulations, through the administrative rule making process, to aid in enforcing the statutes. These statutes and regulations specify the type of controls that the DNR possesses over surface coal mining operations and a surface coal mining company's use of ground water. The legislature expressly reserved the powers enumerated in I-SMCRA for the DNR. The DNR promulgated regulations through its enforcement arm, the NRC, to further refine those powers. We conclude that the DNR does have the express statutory authority to regulate and control surface coal mining, including a surface coal mine operator's use of ground water.

Amax, 638 N.E.2d at 419-426. Just as the Indiana Supreme Court in Amax held that the Indiana counterparts of the Utah Board and Division had broad jurisdiction over hydrology impacts from coal mining, so too should this Court affirm the power of the Utah

Division and Board of Oil, Gas & Mining to make CHIA findings regarding all anticipated mining in the cumulative impact area under study in a given permit action. A copy of the detailed hydrology regulations binding on the Division and the Board are attached to this Brief behind Addendum Tab 7 (i.e., Utah Administrative Rules R645-301-700 et seq.).

C. The Board Correctly Refused To Order Water Replacement After The Board Found From the Conflicting Evidence That None Had Been Lost

In this case, the Water Users are quite inconsistent in their views on jurisdiction (i.e., even on appeal). Under their first three appeal points, the Water Users would deprive the Board of the right to make appropriate CHIA findings, while their fourth point is to require the Board to order water replacement, presumably without the benefit of a true CHIA.

All that needs be said about the fourth issue on appeal is that the Board's ruling under 30 U.S.C. § 1309a is solid. The relevant portion of that statute, subsection (2), only applies to circumstances where a coal permittee must "Promptly replace any drinking, domestic, or residential water supply from a well or spring in existence prior to the application for a surface coal mining and reclamation permit, which has been affected by contamination, diminution, or interruption resulting from underground coal mining operations." Id. The statute plainly uses the past tense. The Water Users failed to prove to the Board that either the quantity or quality of their spring water in fact "has been affected" by mining at the Bear Canyon Mine. On these facts, amply supported by substantial evidence in the

record, there would be no legal basis for an order of water replacement, and the Board so held. See Order, Record on Appeal at 810, ¶ 9.

VII. CONCLUSION

The Board's Order was limited to matters which fall squarely within the Board's grant of jurisdiction and which were fairly raised by the parties' pleadings and the public notice period. The record in this case demonstrates that the Water Users have at no time prior to their loss on the merits interpreted the CHIA requirements as narrowly as they now do.

Obviously, if the Board had jurisdiction under applicable law to make the subsidiary CHIA findings it did make about the Blind Canyon Seam's cumulative hydrological relationship to the Tank Seam and the Water Users' two springs--and it did--and if the Water Users throughout the entire trial demanded that the Board make precisely those very CHIA findings--and they did--the first three issues on appeal must be decided against the Water Users. With respect to the fourth issue on appeal, the Board expressly found from the contested hydrological evidence that Big Bear Spring and Birch Spring have not in fact suffered any material adverse impact from mining by Co-Op in either the Tank Seam or the Blind Canyon Seam. Thus, the Board quite correctly refused to order Co-Op to "replace" any water as sought by the Water Users under the authority of 30 U.S.C. § 1309a.

The Board did not err on any question of law. Indeed, the Board properly resolved the CHIA issues raised by the Water

Users' global challenge to the Significant Permit Revision to allow mining in the Tank Seam. The Water Users insisted that the Board examine alleged hydrological impacts from mining in both the Tank Seam and the Blind Canyon Seam, so it was quite right for the Board to look at both seams as part of the mandatory CHIA analysis. All of the Board's factual findings concerning the contested CHIA issues are supported by substantial evidence in the record. The Board's Order of June 13, 1995 should, therefore, be affirmed.

Respectfully submitted this 22d day of April, 1996.

Jan Graham
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CERTIFICATE OF SERVICE

I hereby certify that I caused two true and correct copies of the foregoing "BRIEF OF RESPONDENT BOARD OF OIL, GAS & MINING" to be mailed, postage prepaid, on the 22d day of April, 1996, to the following:

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INDEX OF ITEMS IN THE ADDENDUM

- Tab 1 Record on Appeal Page 488: Topographic Map entitled, "Locations of Springs in Vicinity of the Mine Permit Area"
- Tab 2 Record on Appeal Page 389: Written Findings re "Significant Permit Revision Approval"
- Tab 3 Record on Appeal Page 486: Figure 2-4 entitled, "Generalized Block Diagram Showing Occurrence of Groundwater"
- Tab 4 Record on Appeal Pages 390, 427-29, 447-49: Selected pages, including "Conclusions" section from Board hearing Exhibit C, entitled, "Probable Hydrologic Consequences of Mining at Bear Canyon Mine, Emery County, UT" prepared by Earthfax Engineering, Inc." (April 30, 1993)
- Tab 5 Record on Appeal Pages 461, 529-31: Selected pages, including "Conclusions and Recommendations" from Board hearing Exhibit D, entitled, "Revised Hydrogeologic Evaluation of the Bear Canyon Mine Permit and Proposed Expansion Area" prepared by Earthfax Engineering, Inc." (April 26, 1993)
- Tab 6 Record on Appeal Pages 86, 113-15, 168-73, 233-36 (Copies, respectively, of the Board hearing transcript, cover sheet for 10/25/94, T. 28-30, T. 83-88, and T. 148-151) (Transcript pages regarding CHIA evidence)
- Tab 7 Utah Coal Program Hydrology Regulations applicable to Permit Application Requirements (including Significant Permit Revisions), Utah Administrative Rules R645-301-700 et seq.

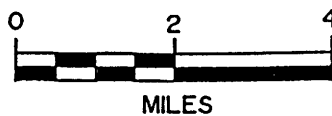
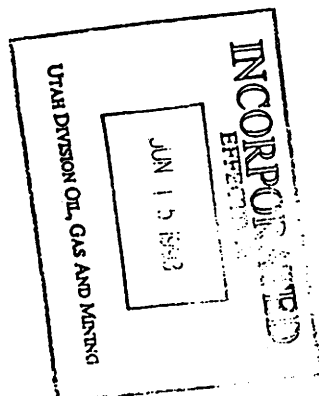
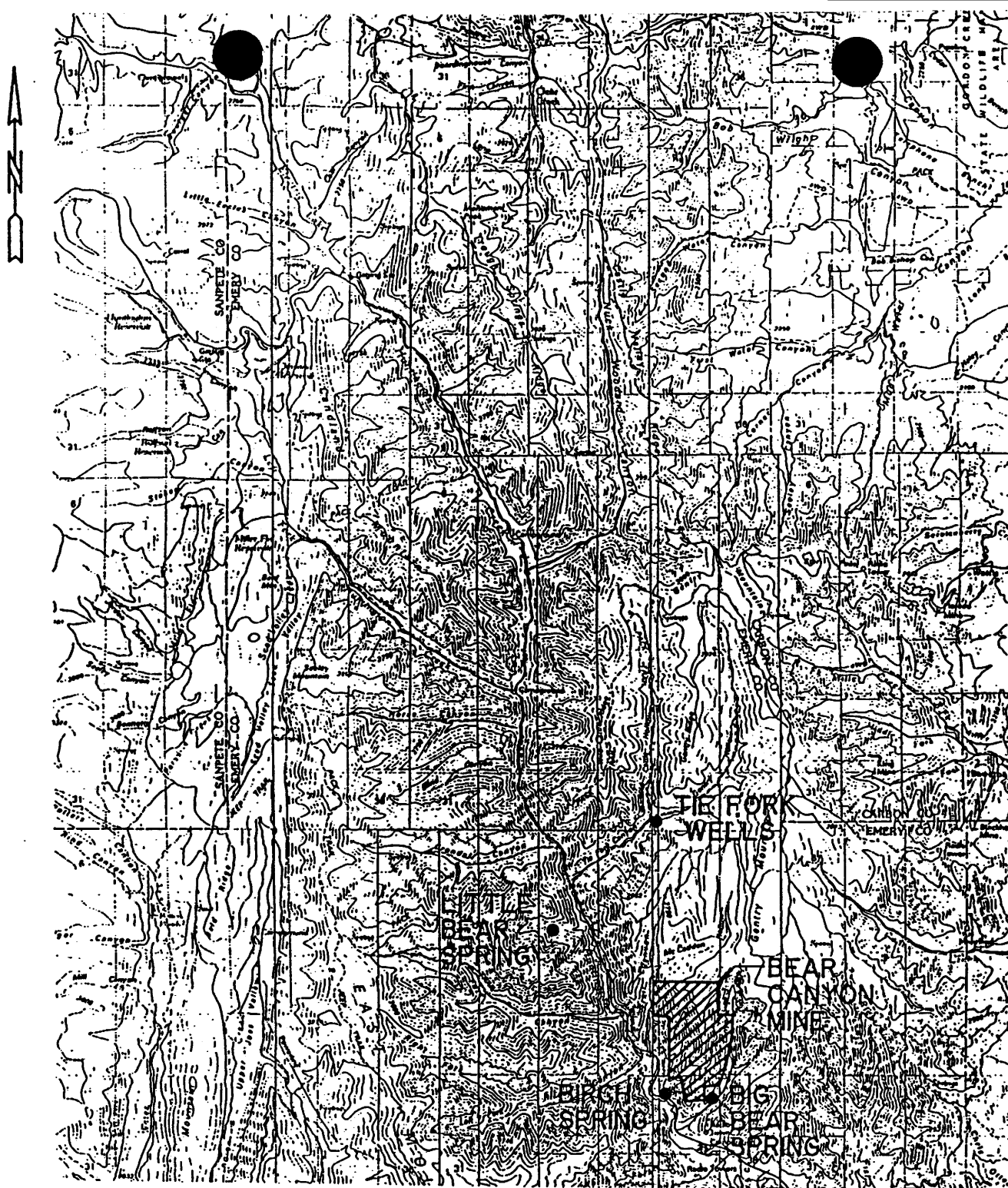


FIGURE 2-5.

Locations of Springs in the Vicinity of the Mine Permit Area

SIGNIFICANT PERMIT REVISION APPROVAL

Copy from

Bank Seam Road Revision

LED

CST 20 1994

PERMIT NUMBER: ACT/015/025

PERMIT CHANGE #: 93B

MINE: Bear Canyon

PERMITTEE: Coop Mining

OIL, GAS & MINING

BOARD

WRITTEN FINDINGS FOR PERMIT APPLICATION APPROVAL

YES, NO or N/A

- | | | |
|-----|--|-----|
| 1. | The application is complete and accurate and the applicant has complied with all the requirements of the State Program. | Yes |
| 2. | The proposed permit area is not within an area under study or administrative proceedings under a petition, filed pursuant to R645-103-400 or 30 CFR 769, to have an area designated as unsuitable for coal mining and reclamation operations, unless: | Yes |
| A. | The applicant has demonstrated that before January 4, 1977, substantial legal and financial commitments were made in relation to the operation covered by the permit application, or | |
| B. | The applicant has demonstrated that the proposed permit area is not within an area designated as unsuitable for mining pursuant to R645-103-300 and R645-103-400 or 30 CFR 769 or subject to the prohibitions or limitations of R645-103-230. | |
| 3. | For coal mining and reclamation operations where the private mineral estate to be mined has been severed from the private surface estate, the applicant has submitted to the Division the documentation required under R645-301-114.200. | Yes |
| 4. | The Division has made an assessment of the probable cumulative impacts of all anticipated coal mining and reclamation operations on the hydrologic balance in the cumulative impact area and has determined that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. | Yes |
| 5. | The operation would not affect the continued existence of endangered or threatened species or result in destruction or adverse modification of their critical habitats, as determined under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.). | Yes |
| 6. | The Division has taken into account the effect of the proposed permitting action on properties listed on and eligible for listing on the National Register of Historic Places. This finding may be supported in part by inclusion of appropriate permit conditions or changes in the operation plan protecting historic resources, or a documented decision that the Division has determined that no additional protection measures are necessary. | Yes |
| 7. | The Applicant has demonstrated that reclamation as required by the State Program can be accomplished according to information given in the permit application. | Yes |
| 8. | The Applicant has demonstrated that any existing structure will comply with the applicable performance standards of R645-301 and R645-302. | Yes |
| 9. | The Applicant has paid all reclamation fees from previous and existing coal mining and reclamation operations as required by 30 CFR Part 870. | Yes |
| 10. | The Applicant has satisfied the applicable requirements of R645-302. | NA |
| 11. | The Applicant has, if applicable, satisfied the requirements for approval of a long-term, intensive agricultural postmining land use, in accordance with the requirements of R645-301-353.400. | NA |
| 12. | Public notice, comment period, and any subsequent hearings or appeals prior to approval of the proposed permit change have been completed with no adverse decision regarding this Significant Permit Revision. | Yes |

SPECIAL CONDITIONS OR STIPULATIONS TO THE SIGNIFICANT PERMIT REVISION APPROVAL

YES NO

- | | | | |
|----|---|---|---|
| 1. | Are there any variances associated with this significant permit revision approval? If yes, attach. | | X |
| 2. | Are there any special conditions associated with this significant permit revision approval? If yes, attach. | | X |
| 3. | Are there any stipulations associated with this significant permit revision approval? If yes, attach. | X | |

The Division hereby grants approval for a Significant Permit Revision to the Existing Permit by incorporation of the proposed changes described herein and effective the date signed below. All other terms and conditions of the Existing Permit shall be maintained and in effect except as superseded by this Significant Permit Revision.

Signed

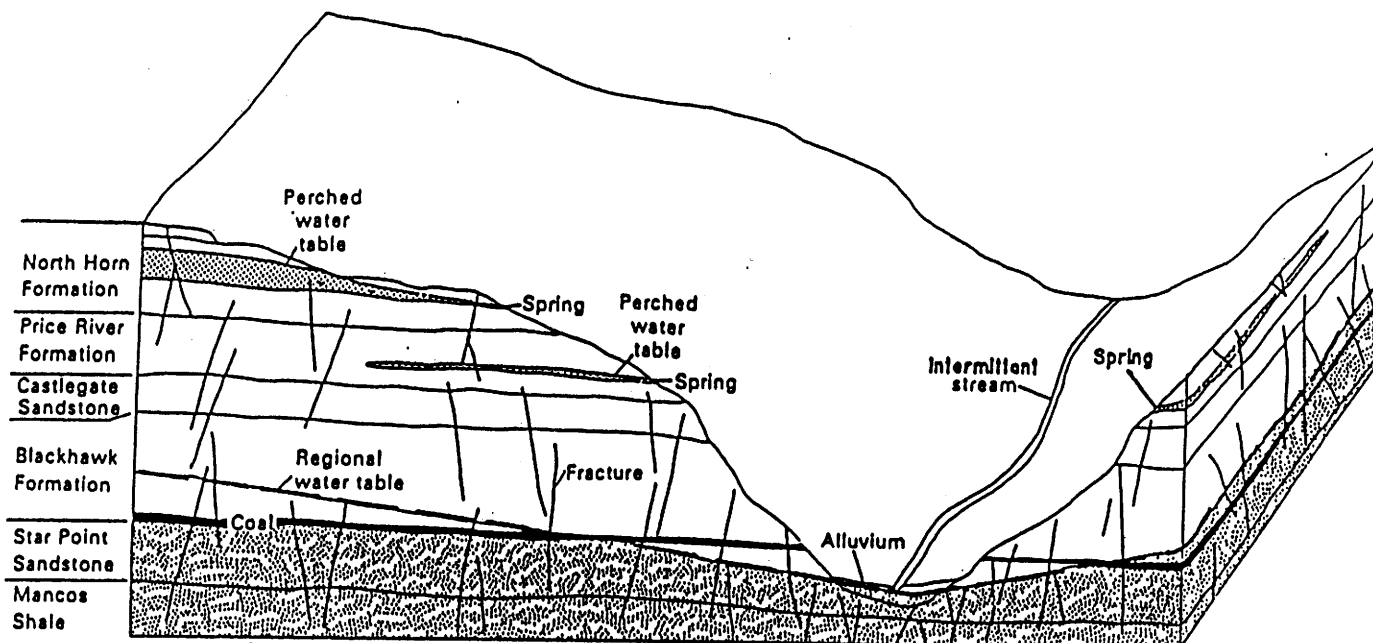
Walter A. Haddock

Division of Oil, Gas and Mining

EXHIBIT A

EFFECTIVE DATE

7/24/94 389



INCORPORATED
EFFECTIVE:
JUN 15 1993
UTAH DIVISION OF OIL, GAS AND MINING

FIGURE 2-4. Generalized Block Diagram Showing Occurrence of Groundwater

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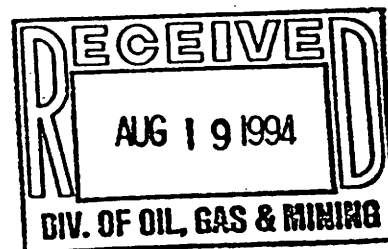
SECRETARY, BOARD OF
OIL, GAS & MINING

APPENDIX 7-J

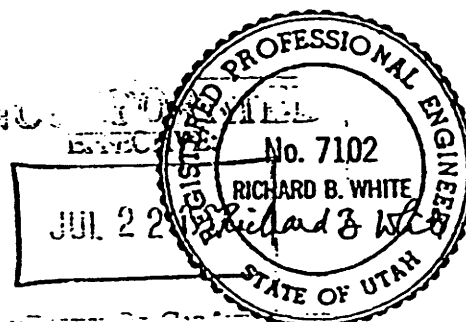
PROBABLE HYDROLOGIC CONSEQUENCES OF MINING
AT BEAR CANYON MINE,
EMERY COUNTY, UTAH

CO-OP MINING COMPANY
Bear Canyon Mine
Emery County, Utah

Prepared by
EARTHFAX ENGINEERING, INC.
Salt Lake City, Utah



April 30, 1993



18 Jun 1993

Company, 1992a), the maximum expected lateral limits of the cone of depression caused by dewatering of the Bear Canyon Mine would be approximately 9,000 feet (1.7 miles) from the mine boundary in the north and south directions and 15,000 feet (2.8 miles) from the mine boundary in the east-west directions. This drawdown terminates wherever the strata immediately above the coal seams being mined are truncated by canyons as in Bear, Blind, and Trail Canyons.

There are no water supply wells located in the permit and adjacent areas. As indicated in the baseline data discussed in Section 2.1.2 of this PHC, there are three springs located above the coal seam in the northern proposed expansion area. There are no water rights associated with these springs (EarthFax Engineering, 1992, p. 2-38).

Because the aquifers that supply springs above the Blind Canyon coal seam are perched, mining operations will have no effect on spring flow or spring water quality (EarthFax Engineering, 1992, pp. 2-23 thru 2-30). It is unlikely that Bear Canyon Mine will impact Birch and Big Bear Springs for six reasons:

1. Tritium data indicate that the source of groundwater inflow to the mine is not the same as the source of Big Bear Springs (the Panther Tongue of the Star Point Sandstone), but perched aquifers containing relict stored water (Section 2.1.2).
2. Stiff and Piper diagrams indicate that the mine water is of a higher quality than that of the other waters in the area and that Birch Spring and the mine water are not hydraulically connected (Section 2.1.3).
3. Information collected during the drilling of the three in-mine monitoring wells suggests that the mine workings may intercept groundwater from the Spring Canyon Tongue of the Star Point Sandstone. However, both Birch and Big Bear Springs issue from the Panther Tongue, which is the lowest tongue of the Star Point Sandstone and 400 feet below the Blind Canyon seam (EarthFax Engineering, 1992, p. 2-17 and Appendix 7N-G).
4. The mine and Birch Spring are separated by a complex zone of fractures and faults. The Blind Canyon Fault is a normal fault with 220 feet of vertical displacement and is located near the western limit of mining in the Bear Canyon Mine. This fault could act either as a conduit (if it has open voids) or as a

JUL 22 1994

barrier (if it is filled with gouge) to groundwater flow. In either case, the fault would probably prevent groundwater from moving from the mine to Birch Spring. If the fault did not act as a barrier, it would convey the water moving within it to the surface as a spring. No such spring is present where the Blind Canyon fault intersects the surface, approximately 800 feet east of Birch Spring.

5. Birch Spring is approximately 8,500 feet from the North Mains section of the mine. The linear velocities calculated for the aquifers of the Star Point Sandstone range from 1.31 to 69.75 feet per year (Section 2.1.2). At the fastest calculated velocity, impact to water quality and quantity at Birch Spring from water in the mine would not occur for at least 122 years.

Lines (1985) presented laboratory determinations of porosity (ranging from 2 to 17 percent) and horizontal hydraulic conductivities (ranging from 1.1×10^{-8} to 3.1×10^{-2} feet per day). Using these data and the maximum hydraulic gradient measured in the in mine drill holes of 0.053 feet per foot (Section 2.1.2), the fastest calculated velocity is 29.98 feet per year. At this velocity, the mine water would not impact Birch Spring for 283 years.

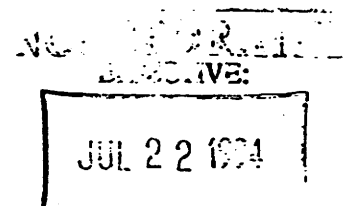
6. Three piezometric surfaces in the Spring Canyon, Storrs, and Panther Tongues of the Star Point Sandstone have been defined by EarthFax Engineering (1992, pp. 2-21 and 2-22) through drilling and testing (Plates 3, 4, and 5, EarthFax Engineering, 1992). The hydraulic gradients are to the south (parallel to the Blind Canyon Fault) and to the southeast (away from the Blind Canyon Fault) (Plate 1, EarthFax Engineering, 1992).

Discharge of groundwater from the underground workings and removal of groundwater in the coal is expected to continue through the life of the mining operation. To date, no negative impact to seeps or springs has been demonstrated. The springs which issue from the perched aquifers will probably remain unaffected by the dewatering. In addition, as noted above, impacts to groundwater availability from the Panther Tongue of the Star Point Sandstone (Birch and Big Bear Springs) in the permit and adjacent areas is unlikely.

2.2.3 Potential Groundwater Quality Impacts

Potential groundwater quality impacts include:

- o Contamination due to rock dust usage;



- o Contamination due to usage of hydrocarbons; and
- o Contamination from road salting.

Rock Dust Usage Impact. The practice of using rock dust for the suppression of coal dust in the mine may potentially impact the groundwater flowing through the mine by dissolution of the rock dust constituents into the water. The use of gypsum rock dust can raise the TDS and sulfate concentrations in the groundwater. Until recently, Co-Op Mining Company used a non-gypsum rock dust. In 1990, use of gypsum rock dust began (Co-Op Mining Company, 1992a).

During January and March, 1992, TDS concentrations were detected that exceed the NPDES Permit guidelines for discharge from the Bear Canyon Mine. Gypsum used in rock dusting is considered to have contributed to the high TDS concentrations. Co-Op Mining Company now uses only lime dust in the Bear Canyon Mine (Co-Op Mining Company, 1992b). Due to the relative dryness of the mine, no future increase in TDS or sulfate concentrations in the groundwater is expected.

Impact of Hydrocarbons. Hydrocarbons (in the form of fuels, greases, and oils) are stored and used in the permit area. Groundwater contamination could result from spillage of hydrocarbon products during maintenance of equipment during operations, filling of storage tanks and vehicle tanks, or from tank leakage due to the rupture of tanks.

The probable future extent of the contamination caused by diesel and oil spillage is expected to be small for six reasons.

1. All above-ground storage tanks are bermed and inner and/or outer catchments are utilized in accordance with the 1992 Spill Prevention Control and Countermeasure Plan (SPCC).
2. No underground storage tanks exist at the site.
3. Because the tanks are located above ground, leakage from the tanks can be readily detected and repaired.

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4.0 CONCLUSIONS

The potential impacts of these mining operations upon the hydrologic balance are summarized in Table 4-1. All of the potential impacts of mining on the hydrologic balance are being properly monitored and mitigation plans have been implemented.

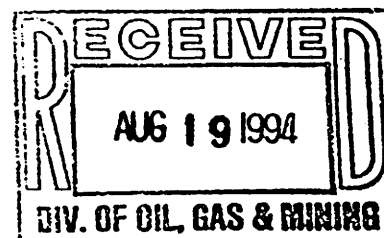
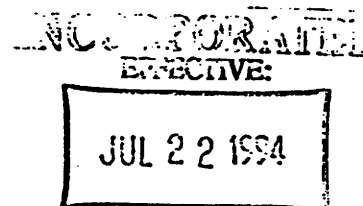


TABLE 4-1
Summary of Potential Impacts and Mitigations

Potential Impact	Potential Effect	Potential Magnitude of Impact	Probability of Occurrence	Mitigation Measures
Leaching of acid- or toxic-forming materials	Degradation of surface and groundwater quality.	Low	Low	Monitoring, materials handled in approved manner.
Groundwater availability	Decrease in spring flow due to subsidence	Low	Low (no history of impact)	Monitoring
Groundwater availability	Interception of perched groundwater by mine workings	Low	High (ongoing)	Monitoring
Groundwater availability	Removal of water with coal	Low	High (ongoing)	Monitoring
Groundwater quality	Decrease in quality due to leaching of rock dust	Low	Low (Dryness of mine)	Monitoring, discontinued use of gypsum rock dust
Groundwater quality	Decrease in quality due to hydrocarbon usage	Low	Low	Monitoring, SPCC plan, inspections and maintenance
Sediment yield	Increase in TSS	Moderate	Low	Sedimentation ponds, diversions, interior sediments, control, monitoring
Flooding	Damage to downstream areas	Moderate	Low	Sedimentation ponds, diversion, monitoring
Stream flow alteration	Damage to streams due to subsidence	Low	Low	Protection of perennial streams, monitoring

TABLE 4-1 (Continued)

Summary of Potential Impacts and Mitigations

Potential Impact	Potential Effect	Potential Magnitude of Impact	Probability of Occurrence	Mitigation Measures
Groundwater quality	Decrease in quality due to road salting	Low	Low	Sedimentation ponds, monitoring, storing of salt off site by County
Surface water quality	Decrease in quality due to leaching of rock dust	Low	Low	Monitoring, discontinued use of gypsum rock dust
Surface water quality	Decrease in quality due to hydrocarbon usage	Low	Low	Monitoring, SPCC plan, inspections, maintenance
Surface water quality	Increase in TSS due to coal spills and wind blown coal dust	Low	Low	monitoring, sedimentation ponds
Surface water quality	Decrease in water quality due to road salting	Low	Moderate	Sedimentation ponds, monitoring
Surface water quality	Increase in flow of Bear Creek due to mine discharge	Low	High (ongoing)	Monitoring, underground. i.e., use of water

FILED

OCT 20 1994

SECRETARY, BOARD OF
OIL, GAS & MINING

APPENDIX 7-N

**REVISED HYDROGEOLOGIC EVALUATION
OF THE BEAR CANYON MINE PERMIT
AND PROPOSED EXPANSION AREAS**

**CO-OP MINING COMPANY
Salt Lake City, Utah**

**Prepared By
EARTHFAX ENGINEERING, INC.
Midvale, Utah**

April 26, 1993

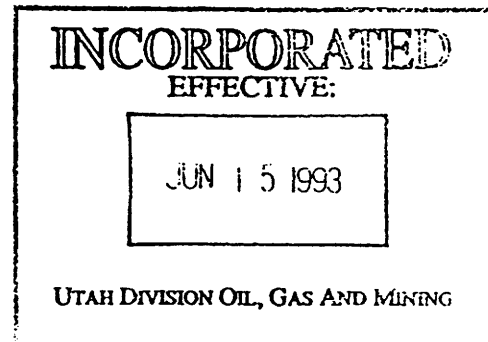


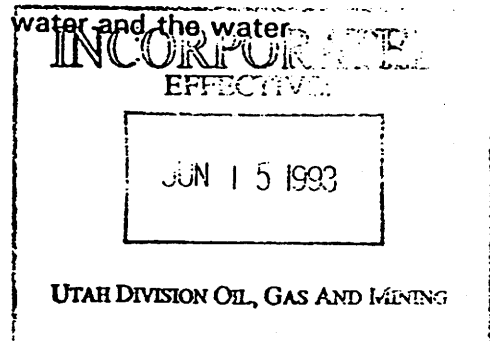
EXHIBIT D

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Based on this study the following conclusions are made:

- o The groundwater system in the area of the Trail Canyon and Bear Canyon mines is mainly controlled by geologic structures (faults and fractures) and lithology.
- o In the area of present development, the regional water table is located below both the Blind Canyon and Hiawatha seams in the Bear Canyon mine, as indicated by in-mine drilling and aquifer testing. The three aquifers within the Star Point Sandstone have separate, distinct static water levels, and are not fully saturated in the southern portion of the permit area.
- o At the present time, there is no evidence to suggest that interception of water within the workings of the Bear Canyon mine has had an impact on water quantity or quality at Big Bear Spring or Birch Spring.
 - Tritium analyses suggest that Bear Canyon Mine water is primarily relict "pre-bomb" water, and does not recharge Big Bear Spring which is "post-bomb" (more recently recharged) water.
 - Analysis of Piper diagrams does not suggest a hydraulic relationship between Bear Canyon Mine water and the water from Birch Springs.



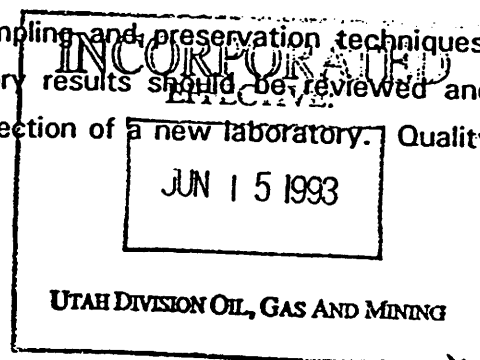
- Analytical results of groundwater samples collected in 1991 indicate that water intercepted by and stored in sumps within the Bear Canyon Mine is of higher quality than that discharged at Big Bear and Birch Springs.
- o Mine water discharge may increase the quantity and improve the quality of water in Bear Creek.
- o Subsidence over the southwest portion of the Bear Canyon Mine cannot impact Birch Springs; Blind Canyon truncates the coal seam before it reaches Blind Canyon Fault or the fault and fracture zone associated with Birch Springs.
- o The recent reductions in spring flows appear to be the result of significant reductions in precipitation amounts over the last five to six years.

5.2 Recommendations

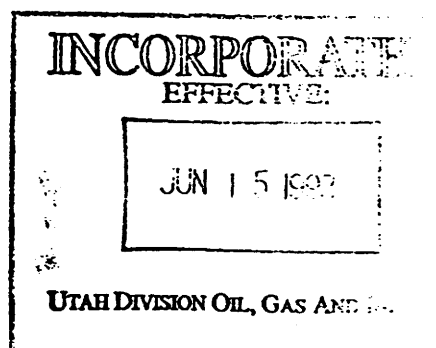
The following recommendations are presented to assist in addressing some of the concerns of the water companies and the Utah Division of Oil, Gas, and Mining:

- o Co-Op Mining Company should continue to periodically monitor flows and water quality at Big Bear and Birch Springs. Regular monitoring will ensure the collection of adequate data for the evaluation of potential mining-related impacts to the springs. Each round of flow monitoring and sample collection should be performed by the same individual, to reduce the possibility of error due to technique.

Special attention should be paid to sampling and preservation techniques. Recently obtained comparative laboratory results should be reviewed and consideration should be given to the selection of a new laboratory. Quality



assurance/quality control samples should be submitted with each round of samples, to allow sampling techniques and laboratory performance to be evaluated.



BEFORE THE BOARD OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
IN AND FOR THE STATE OF UTAH

IN THE MATTER OF THE REQUEST FOR)	
AGENCY ACTION AND APPEAL OF)	DOCKET NO. 94-027
DIVISION DETERMINATION TO APPROVE)	
SIGNIFICANT REVISION TO PERMIT TO)	
ALLOW MINING OF TANK SEAM BY CO-OP)	
MINING COMPANY BY PETITIONERS NORTH)	CAUSE NO ACT/015/025
EMERY WATER USERS ASSOCIATION,)	
HUNTINGTON-CLEVELAND IRRIGATION)	
COMPANY, AND CASTLE VALLEY SPECIAL)	
SERVICES DISTRICT, CARBON)	
COUNTY, UTAH.)	

TUESDAY, OCTOBER 25, 1994, COMMENCING AT THE HOUR OF 9:00
A.M., A HEARING WAS HELD IN THE ABOVE MATTER BEFORE THE
BOARD OF OIL, GAS, AND MINING, 355 WEST NORTH TEMPLE, 3
TRIAD CENTER, SUITE 520, SALT LAKE CITY, UTAH 84180-1203.

INTERMOUNTAIN COURT REPORTERS
5980 SOUTH 300 EAST
MURRAY, UTAH 84107
801 263-1396

FILE NO. 102594

REPORTED BY:
LINDA J. SMURTHWAITE, CSR, RPR, CM

ORIGINAL

1 going to be mined during the same time period. Not
2 necessarily that both seams are going to be mined on the
3 same day, but there may be, for example, a six month
4 period where one mine, one seam will be mined and move
5 up to another seam for a period. That the mining
6 activities will be taking --

7 MS. LEVER: So you are not finished on your lower
8 level?

9 MR. HANSEN: No, not by any means.

10 MR. MITCHELL: If I left that impression, I
11 apologize.

12 MR. LAURISKI: Okay. Anything else? The Board will
13 be in recess for 15 minutes, and we'll reconvene about
14 9:50.

15 (Whereupon a recess was taken.)

16 MR. LAURISKI: We'll go back on the record. We want
17 to first of all deal with the issue of collateral
18 estoppel, and even before that we want to deal with the
19 petitioner's motion on timeliness relative to collateral
20 estoppel.

21 The Board has considered this, has looked at the
22 filings in this particular case, and in our judgment the
23 timeliness motion is relevant to this issue, and I would
24 refer the respondents and the petitioners to a request
25 filed by the respondents on the 12th of September, which

1 asked and moved the Board for an order enlarging Co-op's
2 time to file exhibits with the secretary of the Board,
3 and to file dispositive and other motions until October
4 7th, 1994. The Board granted that motion, also on the
5 7th of October, giving Co-op until that time to get all
6 motions presented.

7 Given that motion and the Board's order, we find the
8 timeliness motion to be -- is granted basically. There
9 by that resolves the issue of collateral estoppel.
10 However, I want to point out that in the Board's
11 deliberations, that the issue before us today relates to
12 the significant revision of the mining permit issued to
13 Co-op in July of this year, and the Board in its
14 deliberations determined that we would only consider
15 evidence as it relates to the impact of mining of the
16 Tank Seam. However, if petitioners need to lay
17 foundation by raising issues that relate to current
18 mining activities and as it impacts, they can show that
19 relationship as it impacts, as it might impact the Tank
20 Seam mining, then we will consider those issues as
21 relevant to this case. Okay?

22 Just for the record, I want to read in how this was
23 noticed, so that everybody understands the frame work
24 with which we'll conduct this hearing. The purpose of
25 this proceeding will be for the Board to consider the

1 objection of the petitioner to the Division for
2 determination of approving Co-op Mining Company's
3 significant revision to extend its mining operations in
4 to the Tank Seam. That also is what appears in the
5 petitioner's motion for this hearing. And so that's how
6 we're going to conduct the hearing, by narrowing that
7 focus as it relates to the Tank Seam and impact of
8 mining on that Tank Seam. Okay.

9 With that, we'll move into the merits of this case
10 and I would ask counsel if they have any opening
11 arguments they wish to present.

12 MR. SMITH: We do, Mr. Chairman. Before I start on
13 my opening arguments I'd like to say something for the
14 record, and I've apologized to Mr. Mitchell privately
15 but I'd like to do it for the record. In the heat of
16 argument I may have made several comments that I
17 immediately felt sorry for, and would like to retract if
18 they may have been construed to have said anything
19 negative towards Mr. Mitchell. I don't know him
20 personally, but I know of him through my association
21 with Division director James Carter, and know that he is
22 an excellent attorney and does an excellent job for this
23 Board and this Division. And I apologize personally and
24 I want to do it publicly and put that before the Board
25 on the record.

1 of solar power and will generate a signal that will be
2 transmitting radio waves to our office so we can
3 continually monitor at least TDS. We hope in the future
4 we could add turbidity monitoring to that as well, as
5 soon as money allows, but those systems are just coming
6 on line now. Our problem is we have no way of knowing
7 if some kind of contamination occurred. It would be in
8 the system and to our customers before we had any way of
9 knowing it.

10 Q. In the last 10 years, have you noticed any
11 what's called anomalous events that have occurred with
12 respect to water flows in Big Bear Spring or water
13 quality?

14 A. Yes, we have. The main events that we saw
15 occurred in the winter of --

16 MR. HANSEN: I object, we're getting very far afield
17 from what's relevant here. There's been no foundation
18 to show that any of this testimony is relevant, and I
19 object on that basis.

20 MR. LAURISKI: Mr. Appel, how is this going to
21 relate to the mining of the Tank Seam? Everything I'm
22 hearing seems to indicate we're talking about a time
23 period of current mining activity into the Blind Canyon
24 seam. What relationship are we getting at between that
25 and the mining activity that's going to occur in the

1 Tank Seam?

2 MR. APPEL: The reason that's important, and we'll
3 tie that together with the expert testimony of Mr.
4 Montgomery, the effect on the surface and the effect on
5 this system of the mine. And he will discuss the
6 interrelationships between Mr. Tegerfees (sic), the
7 faulting that will allow for communication of water, and
8 how the water could get from the Tank Seam down in to
9 this mine, but we have to understand what occurs, and in
10 particular this lower mine, because that's again, as I
11 referenced in the beginning, the middle section of the
12 pipe. And if we're to ignore the middle section of the
13 pipe, you won't have the entire picture. It's
14 foundational and background information for the Board.

15 MR. HANSEN: Again, this testimony is out of order.
16 There's has been no foundation. They are stating they
17 intend to lay the foundation well after the testimony is
18 given. I think before this testimony can be given, they
19 should be required to put on their expert, and establish
20 some foundational grounds to show there is some
21 connection between mining of the Tank Seam and what will
22 happen to these springs.

23 MR. LAURISKI: I tend to agree with Mr. Hansen, we
24 have talked a lot about periods from 1949 through 1984,
25 and 1984 to the present time, and we've yet to hear

1 anything about any relationship to the Tank Seam and how
2 this information's going to tie into that.

3 MR. APPEL: Well, we have to start someplace. We
4 chose to start chronologically back in time and move
5 forward to where the Tank Seam is now, and I'm not sure
6 how best to approach that except to say that this is the
7 way we chose to present it, and I think it makes sense
8 that way. You can see the development and the impacts
9 the mining has had. We'll get to the Tank Seam. We
10 understand that's what this hearing is about. But
11 that's the way we have approached it.

12 We think this is critical background because they
13 are connected. There are interworkings between them
14 based on the way Co-op has suggested they will take the
15 coal out of the Tank Seam, and these workings come into
16 evidence on that basis. The water has to be drained in
17 some way.

18 MR. HANSEN: I take no issue with the statement that
19 they have to start somewhere. But the point here is
20 they have started at the wrong place. Until they show
21 there is some connection between mining the Tank Seam
22 and an adverse impact that may happen to these other
23 springs, all this other testimony is totally irrelevant,
24 and I object to it in its entirety.

25 MR. SMITH: Mr. Chairman?

1 MR. LAURISKI: Mr. Mitchell first.

2 MR. MITCHELL: I guess what I think might be helpful,
3 is if the representation could be made to the Board that
4 they are going to put on evidence that there is water in
5 the Tank Seam. I think if they don't intend to put on
6 any evidence there is any water in the Tank Seam, I'll
7 proffer we'll put on evidence there essentially isn't
8 any water, or no evidence of water in the Tank Seam.
9 Then I guess I'm not sure how it could ever link up.

10 MR. SMITH: Mr. Chairman, if I could be heard.
11 First, it's, I think, not only customary, but required
12 to put on factual evidence before you have your expert
13 come on and give his opinions because the opinions are
14 based on facts that are in evidence. To have the expert
15 come on first and tell you what the connection is, and
16 then have to -- that's a backwards way to approach it.
17 We would draw a similar objection, I'm sure, from the
18 respondents if we put on Mr. Montgomery first and have
19 him give his opinions. They would say there is no
20 factual basis for those opinions. So, you know, it's
21 putting the cart before the horse.

22 On the other point as far as water in the Tank Seam,
23 we have to remember, not only is the Tank Seam going to
24 be mined, but the mining is -- there's a connection
25 created between the Blind Canyon seam and the Tank Seam

1 within the mine itself. It's going to cut through a
2 number of feet of rock and strata of rock, and what's in
3 the Tank Seam itself. It's also to reach -- it is
4 important to our argument. So to try to lend this to
5 what's in the Tank Seam, I think is putting blinders on,
6 because obviously the workings that will have to take
7 place in that mine to get to the Tank Seam are extremely
8 relevant to this Board, because that's exactly what
9 we're here for, is that they're doing revisions to be
10 able to do the workings and get to the Tank Seam. We
11 think there will be more impact caused by getting there
12 than what's in the Tank Seam.

13 But to try to say what's exactly in the Tank Seam is
14 to such a limitation, because they're going to ramp up,
15 as we understand, from the mine plant, to ramp up into
16 the Tank Seam, take the coal out of the Tank Seam down
17 through the present workings. I don't want to be so
18 limited I guess is my point.

19 MR. LAURISKI: I'm going to let you proceed, but I'm
20 having some difficulty seeing where this testimony is
21 going to tie in to your expert's testimony in terms of
22 the future mining of the Tank Seam. So I'll reserve our
23 judgment on the objection, to the relevance of this
24 testimony, until we have had an opportunity to hear from
25 your expert. And there has to be a tie here somewhere,

1 otherwise we're not going to be able to consider the
2 testimony you have presented so far. At least as I can
3 see it.

4 MR. APPEL: I'm willing to proffer to the Board our
5 expert will make that connection for you. What I'm
6 doing with Mr. Leamaster is laying a foundation. It's
7 an interesting objection to suggest I'm not providing
8 foundation when I'm in the process of laying the
9 foundation for the expert. But I appreciate the ability
10 to continue.

11 MR. LAURISKI: Yes.

12 BY MR. APPEL:

13 Q. Mr. Leamaster, I believe we were talking about
14 what we casually referred to as the event. You would
15 explain that to the Board.

16 A. Yes. In the wintertime, 1990, 1991, we and
17 when I say we, I mean our foreman who operates in the
18 area, and myself, observed a great deal of ice formation
19 on the cliffs immediately above our springs, and back
20 towards the Co-op mine. This was something that we had
21 never seen before. I called and made arrangements with
22 the fellow that Mr. Howard -- Darrell Rolly who was
23 familiar with the canyon, and hauled coal out of there
24 for the old mine, and asked him to go with me. I told
25 him I wanted him to see something. I didn't tell him

1 transported it at a much faster rate than nature would
2 have done, through a pipeline and dumped it in the south
3 end of the workings, that water buildup, and eventually
4 infiltrated it. It took a while to move through
5 naturally down to where the springs discharge. So, it
6 had yet to go through an actual section after they had
7 interrupted the flow. But when it finally broke through
8 to the surface, as depicted in the photos there, showing
9 the ice on the cliffs, when it finally broke through to
10 the surface it started spewing down the surface. It
11 picked up additional total dissolved solids and started
12 infiltrating again in this section before it got into
13 the spring area, in to the fractures and so forth.

14 So you have first an increase in flow, due to this
15 shift of water, making it more available at the face of
16 the cliffs where it could go directly into the recharge
17 system of those springs, fault systems. Then eventually
18 the calcium sulfate that was used in the mine for rock
19 dust as well as the increased solids in the shale beds,
20 picked up additional -- the water moving through there
21 picked up additional sulfates, calcium sulfate, and it
22 doubled in both springs, Birch Springs and Big Bear
23 Spring, it doubled the concentration of calcium sulfate
24 during that period of 1990 to '91.

25 MR. HANSEN: Again, I object. All of Mr.

1 Montgomery's testimony, at least since the lunch break,
2 has nothing to do with Co-op Mine's mining activities in
3 the Tank Seam, and potential impact of those particular
4 activities. The petitioners, at the beginning of these
5 proceedings, stated that they intended to keep their
6 case narrow to that issue, and instead they have been
7 wandering all over the field getting in to things that
8 happened years ago in the Blind Canyon seam, things in
9 the Hiawatha Seam, and made no serious effort to tie
10 those long ago events to what may occur if Co-op's Mine
11 is permitted to mine the Tank Seam.

12 I think that they should be instructed to confine
13 their testimony to that specific area.

14 MR. LAURISKI: Mr. Appel?

15 MR. APPEL: I've been sitting here fairly silent,
16 but I think we would likely be able to tie this all
17 together if we could proceed with the expert testimony
18 of Mr. Montgomery without these continual objections as
19 to form. I know that Mr. Hansen doesn't like Mr.
20 Montgomery's conclusions, but he's here as an expert and
21 they'll be entitled to have conclusions from their
22 expert. I think the Board should understand our
23 presentation without continual objection.

24 MR. LAURISKI: Let's move forward, but at this point
25 I agree with Mr. Hansen, that we haven't been able to

1 see that tie between the Tank Seam, what is projected to
2 be the impact of mining the Tank Seam and what we're
3 seeing out of these springs. And I think we need to
4 reach that point. I'm writing myself a lot of
5 questions, where do we get this tie, and I tend to
6 agree, we haven't reached that point yet. We have been
7 talking about periods pre 1994 or even before that, and
8 this thing wasn't approved until July of 1994.

9 MR. SMITH: I think we'll very quickly and shortly
10 tie these things together if I can get the rest of my
11 exhibits ruled on and testified to, then that's exactly
12 my next question for our expert, is directed right
13 towards the SHEA, is the acronym, prepared by the
14 Division for this significant revision.

15 MR. LAURISKI: Okay. Let me do this Mr. Hansen. I
16 know you have a continuing objection to all this
17 testimony and it's noted so that we can proceed. Mr.
18 Mitchell, I've heard some of your objections relative to
19 relevance, and we'll assume that on all those issues
20 it's a continuing objection and take those under
21 advisement when we deal on this issue.

22 So if you would, if we can move in to the relevance
23 of Mr. Montgomery's summary relative to the Tank Seam.

24 MR. SMITH: If I could ask for admission of Exhibit
25 15. I think Mr. Montgomery testified that he relied on

1 other USGS reports that, to tie in, I think the only
2 problem was with whether the Little Bear had any
3 relevance. I didn't hear any objection to either the
4 precipitation or the flows of the two other springs. I
5 move for admission of Exhibit 15.. I'd also like Mr.
6 Montgomery to identify -- I'll do that and then move
7 on.

8 MR. LAURISKI: We have the objections listed on
9 Exhibit 15, and I'll note those objections, and we'll go
10 ahead and take the evidence and consider the objection
11 relative to the --

12 MR. MITCHELL: So is it fair to say at this time on
13 15, you're reserving whether you're going to take it or
14 not?

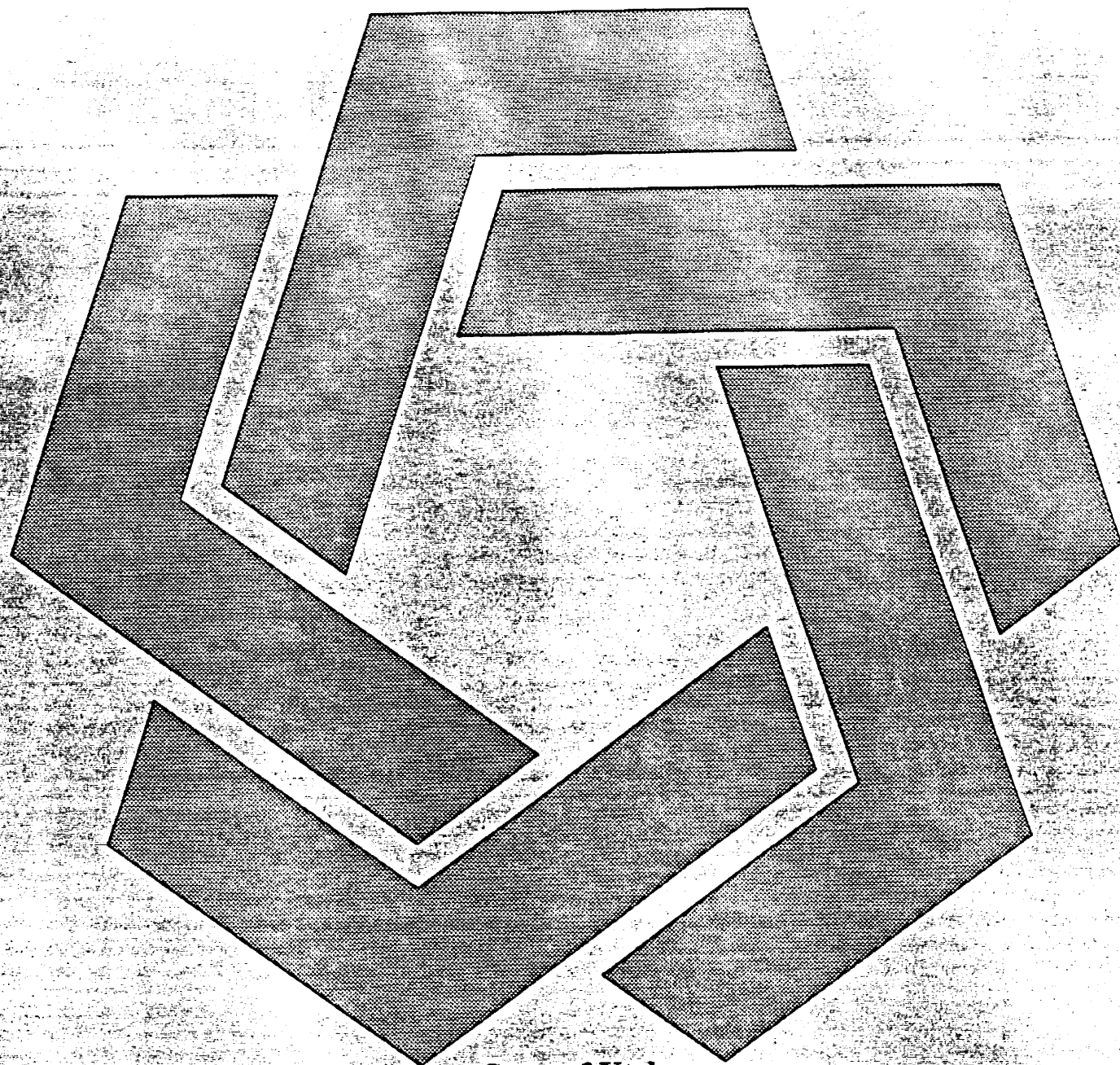
15 MR. LAURISKI: That's correct.

16 MR. MITCHELL: And there will be an opportunity to
17 cross examine Mr. Montgomery with regard to that exhibit
18 further?

19 MR. LAURISKI: Yes, you will.

20 MR. SMITH: I then would like to have Mr. Montgomery
21 identify Exhibit 16, which is a flow of just the, or
22 chart of just the precipitation for Big Bear and Big
23 Bear Springs for a shorter period of time, more detailed
24 breaking up of the year from 1989 to 1994. And I'll
25 have him identify that so we can get that moved for

STATE OF UTAH
R645 - COAL MINING RULES
OCTOBER 1, 1994



State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
(801) 538-5340

R645. Natural Resources; Oil, Gas and Mining; Coal.

R645-301. COAL MINE PERMITTING: PERMIT APPLICATION REQUIREMENTS

R645-301-700. HYDROLOGY

- 710. Introduction
- 720. Environmental Description
- 730. Operation Plan
- 740. Design Criteria and Plans
- 750. Performance Standards
- 760. Reclamation

R645-301-700. Hydrology.

710. Introduction.

711. General Requirements. Each permit application will include descriptions of:

711.100. Existing hydrologic resources as given under R645-301-720.

711.200. Proposed operations and potential impacts to the hydrologic balance as given under R645-301-730.

711.300. The methods and calculations utilized to achieve compliance with hydrologic design criteria and plans given under R645-301-740.

711.400. Applicable hydrologic performance standards as given under R645-301-750.

711.500. Reclamation activities as given under R645-301-760.

712. Certification. All cross sections, maps and plans required by R645-301-722 as appropriate, and R645-301-731.700 will be prepared and certified according to R645-301-512.

713. Inspection. Impoundments will be inspected as described under R645-301-514.300.

720. Environmental Description.

721. General Requirements. Each permit application will include a description of the existing, premining hydrologic resources within the proposed permit and adjacent areas that may be affected or impacted by the proposed coal mining and reclamation operation.

722. Cross Sections and Maps. The application will include cross sections and maps showing:

722.100. Location and extent of subsurface water, if encountered, within the proposed permit or adjacent areas. For UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES, location and extent will include, but not limited to areal and vertical distribution of aquifers, and portrayal of seasonal differences of head in different aquifers on cross-sections and contour maps;

722.200. Location of surface water bodies such as streams, lakes, ponds and springs, constructed or natural drains, and irrigation ditches within the proposed permit and adjacent areas;

722.300. Elevations and locations of monitoring stations used to gather baseline data on water quality and quantity in preparation of the application;

722.400. Location and depth, if available, of water wells in the permit area and adjacent area; and

722.500. Sufficient slope measurements or contour maps to adequately represent the existing land surface configuration of proposed disturbed areas for UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES and the proposed permit area for SURFACE COAL MINING AND RECLAMATION ACTIVITIES will be measured and recorded to take into account natural variations in slope, to provide accurate representation of the range of natural slopes and reflect geomorphic differences of the area to be disturbed.

723. Sampling and Analysis. All water quality analyses performed to meet the requirements of R645-301-723 through R645-301-724.300, R645-301-724.500, R645-301-725 through R645-301-731, and R645-301-731.210 through R645-301-731.223 will be conducted according to the methodology in the current edition of "Standard Methods for the Examination of Water and Wastewater" or the methodology in 40 CFR Parts 136 and 434. Water quality sampling performed to meet the requirements of R645-301-723 through R645-301-724.300, R645-301-724.500, R645-301-725 through R645-301-731, and R645-301-731.210 through R645-301-731.223 will be conducted according to either methodology listed above when feasible. "Standard Methods for the Examination of Water and Wastewater" is a joint publication of the American Public Health Association, the American Water Works Association, and the Water Pollution Control Federation and is available from the American Public Health Association, 1015 Fifteenth Street, NW, Washington, D. C. 20036.

724. Baseline Information. The application will include the following baseline hydrologic, geologic and climatologic information, and any additional information required by the Division.

724.100. Ground Water Information. The location and ownership for the permit and adjacent areas of existing wells, springs and other ground-water resources, seasonal quality and quantity of ground water, and usage. Water quality descriptions will include, at a minimum, total dissolved solids or specific conductance corrected to 25 degrees C, pH, total iron and total manganese. Ground-water quantity descriptions will include, at a minimum, approximate rates of discharge or usage and depth to the water in the coal seam, and each water-bearing stratum above and potentially impacted stratum below the coal seam.

724.200. Surface water information. The name, location, ownership and description of all surface-water bodies such as streams, lakes and impoundments, the location of any discharge into any surface-water body in the proposed permit and adjacent areas, and information on surface-water quality and quantity sufficient to demonstrate seasonal variation and water usage. Water quality descriptions will include, at a minimum, baseline information on total suspended solids, total dissolved solids or specific conductance corrected to 25 degrees C, pH, total iron and total manganese. Baseline acidity and alkalinity information will be provided if there is a potential for acid drainage from the proposed mining operation. Water quantity descriptions will include, at a minimum, baseline information on seasonal flow rates.

724.300. Geologic Information. Each application will include geologic information in sufficient detail, as given under R645-301-624, to assist in:

- 724.310. Determining the probable hydrologic consequences of the operation upon the quality and quantity of surface and ground water in the permit and adjacent areas, including the extent to which surface- and ground-water monitoring is necessary; and
- 724.320. Determining whether reclamation as required by the R645 Rules can be accomplished and whether the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.
- 724.400. Climatological Information.
- 724.410. When requested by the Division, the permit application will contain a statement of the climatological factors that are representative of the proposed permit area, including:
- 724.411. The average seasonal precipitation;
- 724.412. The average direction and velocity of prevailing winds; and
- 724.413. Seasonal temperature ranges.
- 724.420. The Division may request such additional data as deemed necessary to ensure compliance with the requirements of R645-301 and R645-302.
- 724.500. Supplemental information. If the determination of the PHC required by R645-301-728 indicates that adverse impacts on or off the proposed permit area may occur to the hydrologic balance, or that acid-forming or toxic-forming material is present that may result in the contamination of ground-water or surface-water supplies, then information supplemental to that required under R645-301-724.100 and R645-301-724.200 will be provided to evaluate such probable hydrologic consequences and to plan remedial and reclamation activities. Such supplemental information may be based upon drilling, aquifer tests, hydrogeologic analysis of the water-bearing strata, flood flows, or analysis of other water quality or quantity characteristics.
- 724.600. Survey of Renewable Resource Lands. For the purposes of UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES, the applicant will provide a survey that shows whether aquifers or areas for the recharge of aquifers exist within the permit and adjacent area and whether subsidence, if it occurred, could cause material damage or diminution of reasonably foreseeable use of aquifers or areas for the recharge of aquifers. Renewable resource survey information will be incorporated into the subsidence control plan listed under R645-301-525.
- 724.700. Each permit application that proposes to conduct coal mining and reclamation operations within a valley holding a stream or in a location where the permit area or adjacent area includes any stream will meet the requirements of R645-302-320.
725. Baseline Cumulative Impact Area Information.
- 725.100. Hydrologic and geologic information for the cumulative impact area necessary to assess the probable cumulative hydrologic impacts of the proposed coal mining and reclamation operation and all anticipated coal mining and reclamation operations on surface- and ground-water systems as required by R645-301-729 will be provided to the Division if available from appropriate federal or state agencies.
- 725.200. If this information is not available from such agencies, then the applicant may gather and submit this information to the Division as part of the permit application.
- 725.300. The permit will not be approved until the necessary hydrologic and geologic information is available to the Division.
726. Modeling. The use of modeling techniques, interpolation or statistical techniques may be included as part of the permit application, but actual surface- and ground-water information may be required by the Division for each site even when such techniques are used.
727. Alternative Water Source Information. If the probable hydrologic consequences determination required by R645-301-728 indicates that the proposed SURFACE COAL MINING AND RECLAMATION ACTIVITY may proximately result in contamination, diminution, or interruption of an underground or surface source of water within the proposed permit or adjacent areas which is used for domestic, agricultural, industrial or other legitimate purpose, then the application will contain information on water availability and alternative water sources, including the suitability of alternative water sources for existing premining uses and approved postmining land uses.
728. Probable Hydrologic Consequences (PHC) Determination.
- 728.100. The permit application will contain a determination of the PHC of the proposed coal mining and reclamation operation upon the quality and quantity of surface and ground water under seasonal flow conditions for the proposed permit and adjacent areas.
- 728.200. The PHC determination will be based on baseline hydrologic, geologic and other information collected for the permit application and may include data statistically representative of the site.
- 728.300. The PHC determination will include findings on:
- 728.310. Whether adverse impacts may occur to the hydrologic balance;
- 728.320. Whether acid-forming or toxic-forming materials are present that could result in the contamination of surface- or ground-water supplies;
- 728.330. What impact the proposed coal mining and reclamation operation will have on:
- 728.331. Sediment yield from the disturbed area;
- 728.332. Acidity, total suspended and dissolved solids and other important water quality parameters of local impact;
- 728.333. Flooding or streamflow alteration;
- 728.334. Ground-water and surface-water availability; and
- 728.335. Other characteristics as required by the Division; and
- 728.340. Whether the proposed SURFACE COAL MINING AND RECLAMATION ACTIVITY will proximately result in contamination, diminution or interruption of an underground or surface source of water within the

proposed permit or adjacent areas which is used for domestic, agricultural, industrial or other legitimate purpose.

- 728.400. An application for a permit revision will be reviewed by the Division to determine whether a new or updated PHC determination will be required.

729. Cumulative Hydrologic Impact Assessment (CHIA).

- 729.100. The Division will provide an assessment of the probable cumulative hydrologic impacts of the proposed coal mining and reclamation operation and all anticipated coal mining and reclamation operations upon surface- and ground-water systems in the cumulative impact area. The CHIA will be sufficient to determine, for purposes of permit approval whether the proposed coal mining and reclamation operation has been designed to prevent material damage to the hydrologic balance outside the permit area. The Division may allow the applicant to submit data and analyses relevant to the CHIA with the permit application.

- 729.200. An application for a permit revision will be reviewed by the Division to determine whether a new or updated CHIA will be required.

730. Operation Plan.

731. General Requirements. The permit application will include a plan, with maps and descriptions, indicating how the relevant requirements of R645-301-730, R645-301-740, R645-301-750 and R645-301-760 will be met. The plan will be specific to the local hydrologic conditions. It will contain the steps to be taken during coal mining and reclamation operations through bond release to minimize disturbance to the hydrologic balance within the permit and adjacent areas; to prevent material damage outside the permit area; to support approved postmining land use in accordance with the terms and conditions of the approved permit and performance standards of R645-301-750; to comply with the Clean Water Act (33 U.S.C. 1251 et seq.); and to meet applicable federal and Utah water quality laws and regulations. The plan will include the measures to be taken to: avoid acid or toxic drainage; prevent to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow; provide water treatment facilities when needed; and control drainage. For the purposes of SURFACE COAL MINING AND RECLAMATION ACTIVITIES the plan will include measures to be taken to protect or replace water rights and restore approximate premining recharge capacity. The plan will specifically address any potential adverse hydrologic consequences identified in the PHC determination prepared under R645-301-728 and will include preventative and remedial measures.

The Division may require additional preventative, remedial or monitoring measures to assure that material damage to the hydrologic balance outside the permit area is prevented. Coal mining and reclamation operations that minimize water pollution and changes in flow will be used in preference to water treatment.

731.100. Hydrologic-Balance Protection.

- 731.110. Ground-Water Protection. In order to protect the hydrologic balance, coal mining and reclamation operations will be conducted according to the plan approved under R645-301-731 and the following:

- 731.111. Ground-water quality will be protected by handling earth materials and runoff in a manner that minimizes acidic, toxic or other harmful infiltration to ground-water systems and by managing excavations and other disturbances to prevent or control the discharge of pollutants into the ground water; and

- 731.112. For the purposes of SURFACE COAL MINING AND RECLAMATION ACTIVITIES ground-water quantity will be protected by handling earth materials and runoff in a manner that will restore approximate premining recharge capacity of the reclaimed area as a whole, excluding coal mine waste disposal areas and fills, so as to allow the movement of water to the ground-water system.

- 731.120. Surface-Water Protection. In order to protect the hydrologic balance, coal mining and reclamation operations will be conducted according to the plan approved under R645-301-731 and the following:

- 731.121. Surface-water quality will be protected by handling earth materials, ground-water discharges and runoff in a manner that minimizes the formation of acidic or toxic drainage; prevents, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow outside the permit area; and, otherwise prevent water pollution. If drainage control, restabilization and revegetation of disturbed areas, diversion of runoff, mulching or other reclamation and remedial practices are not adequate to meet the requirements of R645-301-731.100 through R645-301-731.522, R645-301-731.800 and R645-301-751, the operator will use and maintain the necessary water treatment facilities or water quality controls; and

- 731.122. Surface-water quantity and flow rates will be protected by handling earth materials and runoff in accordance with the steps outlined in the plan approved under R645-301-731.

731.200. Water Monitoring.

- 731.210. Ground-Water Monitoring. Ground-water monitoring will be conducted according to the plan approved under R645-301-731.200 and the following:

- 731.211. The permit application will include a ground-water monitoring plan based upon the PHC determination required under R645-301-728 and the analysis of all baseline hydrologic, geologic and other information in the permit application. The plan will provide for the monitoring of parameters that relate to the suitability of the ground water for current and approved postmining land uses and to the objectives for protection of the hydrologic balance set forth in R645-301-731. It will identify the quantity and quality parameters to be monitored, sampling frequency and site locations. It will describe how these data may be used to determine the impacts of the operation upon the hydrologic balance. At a minimum, total dissolved solids or specific conductance corrected to 25 degrees C, pH, total iron, total manganese and water levels will be monitored;

- 731.212. Ground-water will be monitored and data will be submitted at least every three months for each monitoring location. Monitoring submittals will include analytical results from each sample taken during the approved reporting period. When the analysis of any ground-water sample indicates noncompliance with the permit conditions, then the operator will promptly notify the Division and immediately

take the actions provided for in R645-300-145 and R645-301-731;

- 731.213. If an applicant can demonstrate by the use of the PHC determination and other available information that a particular water-bearing stratum in the proposed permit and adjacent areas is not one which serves as an aquifer which significantly ensures the hydrologic balance within the cumulative impact area, then monitoring of that stratum may be waived by the Division;
- 731.214. Ground-water monitoring will proceed through mining and continue during reclamation until bond release. Consistent with the procedures of R645-303-220 through R645-303-228, the Division may modify the monitoring requirements including the parameters covered and the sampling frequency if the operator demonstrates, using the monitoring data obtained under R645-301-731.214 that:
- 731.214.1. The coal mining and reclamation operation has minimized disturbance to the prevailing hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses and the SURFACE COAL MINING AND RECLAMATION ACTIVITY has protected or replaced the water rights of other users; or
- 731.214.2. Monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan approved under R645-301-731.211.
- 731.215. Equipment, structures and other devices used in conjunction with monitoring the quality and quantity of ground water on-site and off-site will be properly installed, maintained and operated and will be removed by the operator when no longer needed.
- 731.220. Surface-Water Monitoring. Surface-water monitoring will be conducted according to the plan approved under R645-301-731.220 and the following:
- 731.221. The permit application will include a surface-water monitoring plan based upon the PHC determination required under R645-301-728 and the analysis of all baseline hydrologic, geologic and other information in the permit application. The plan will provide for the monitoring of parameters that relate to the suitability of the surface water for current and approved postmining land uses and to the objectives for protection of the hydrologic balance as set forth in R645-301-731 as well as the effluent limitations found in R645-301-751;
- 731.222. The plan will identify the surface water quantity and quality parameters to be monitored, sampling frequency and site locations. It will describe how these data may be used to determine the impacts of the operation upon the hydrologic balance:
- 731.222.1. At all monitoring locations in streams, lakes and impoundments, that are potentially impacted or into which water will be discharged and at upstream monitoring locations, the total dissolved solids or specific conductance corrected to 25 degrees C, total suspended solids, pH, total iron, total manganese and flow will be monitored; and
- 731.222.2. For point-source discharges, monitoring will be conducted in accordance with 40 CFR Parts 122 and 123, R645-301-751 and as required by the Utah Division of Environmental Health for National Pollutant Discharge Elimination System (NPDES) permits;
- 731.223. Surface-water monitoring data will be submitted at least every three months for each monitoring location. Monitoring submittals will include analytical results from each sample taken during the approved reporting period. When the analysis of any surface water sample indicates noncompliance with the permit conditions, the operator will promptly notify the Division and immediately take the actions provided for in R645-300-145 and R645-301-731. The reporting requirements of this paragraph do not exempt the operator from meeting any National Pollutant Discharge Elimination System (NPDES) reporting requirements;
- 731.224. Surface-water monitoring will proceed through mining and continue during reclamation until bond release. Consistent with R645-303-220 through R645-303-228, the Division may modify the monitoring requirements, except those required by the Utah Division of Environmental Health, including the parameters covered and sampling frequency if the operator demonstrates, using the monitoring data obtained under R645-301-731.224 that:
- 731.224.1. The operator has minimized disturbance to the hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses and the SURFACE COAL MINING AND RECLAMATION ACTIVITY has protected or replaced the water rights of other users; or
- 731.224.2. Monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan approved under R645-301-731.221.
- 731.225. Equipment, structures and other devices used in conjunction with monitoring the quality and quantity of surface water on-site and off-site will be properly installed, maintained and operated and will be removed by the operator when no longer needed.
- 731.300. Acid- and Toxic-Forming Materials.
- 731.310. Drainage from acid- and toxic-forming materials and underground development waste into surface water and ground water will be avoided by:
- 731.311. Identifying and burying and/or treating, when necessary, materials which may adversely affect water quality, or be detrimental to vegetation or to public health and safety if not buried and/or treated; and
- 731.312. Storing materials in a manner that will protect surface water and ground water by preventing erosion, the formation of polluted runoff and the infiltration of polluted water. Storage will be limited to the period until burial and/or treatment first become feasible, and so long as storage will not result in any risk of water pollution or other environmental damage.

- 731.320. Storage, burial or treatment practices will be consistent with other material handling and disposal provisions of R645 Rules.
- 731.400. Transfer of Wells. Before final release of bond, exploratory or monitoring wells will be sealed in a safe and environmentally sound manner in accordance with R645-301-631, R645-301-738, and R645-301-765. With the prior approval of the Division, wells may be transferred to another party for further use. However, at a minimum, the conditions of such transfer will comply with Utah and local laws and the permittee will remain responsible for the proper management of the well until bond release in accordance with R645-301-529, R645-301-551, R645-301-631, R645-301-738, and R645-301-765.
- 731.500. Discharges.
- 731.510. Discharges into an underground mine.
- 731.511. Discharges into an underground mine are prohibited, unless specifically approved by the Division after a demonstration that the discharge will:
- 731.511.1. Minimize disturbance to the hydrologic balance on the permit area, prevent material damage outside the permit area and otherwise eliminate public hazards resulting from coal mining and reclamation operations;
 - 731.511.2. Not result in a violation of applicable water quality standards or effluent limitations;
 - 731.511.3. Be at a known rate and quality which will meet the effluent limitations of R645-301-751 for pH and total suspended solids, except that the pH and total suspended solids limitations may be exceeded, if approved by the Division; and
 - 731.511.4. Meet with the approval of MSHA.
- 731.512. Discharges will be limited to the following:
- 731.512.1. Water;
 - 731.512.2. Coal processing waste;
 - 731.512.3. Fly ash from a coal fired facility;
 - 731.512.4. Sludge from an acid-mine-drainage treatment facility;
 - 731.512.5. Flue-gas desulfurization sludge;
 - 731.512.6. Inert materials used for stabilizing underground mines; and
 - 731.512.7. Underground mine development wastes.
- 731.513. Water from the underground workings of an UNDERGROUND COAL MINING AND RECLAMATION ACTIVITY may be diverted into other underground workings according to the requirements of R645-301-731.100 through R645-301-731.522 and R645-301-731.800.
- 731.520. Gravity Discharges from UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES.
- 731.521. Surface entries and accesses to underground workings will be located and managed to prevent or control gravity discharge of water from the mine. Gravity discharges of water from an underground mine, other than a drift mine subject to R645-301-731.522, may be allowed by the Division if it is demonstrated that the untreated or treated discharge complies with the performance standards of R645-301 and R645-302 and any additional NPDES permit requirements.
- 731.522. Notwithstanding anything to the contrary in R645-301-731.521, the surface entries and accesses of drift mines first used after January 21, 1981 and located in acid-producing or iron-producing coal seams will be located in such a manner as to prevent any gravity discharge from the mine.
- 731.600. Stream Buffer Zones.
- 731.610. No land within 100 feet of a perennial stream or an intermittent stream will be disturbed by coal mining and reclamation operations, unless the Division specifically authorizes coal mining and reclamation operations closer to, or through, such a stream. The Division may authorize such activities only upon finding that:
- 731.611. Coal mining and reclamation operations will not cause or contribute to the violation of applicable Utah or federal water quality standards and will not adversely affect the water quantity and quality or other environmental resources of the stream; and
 - 731.612. If there will be a temporary or permanent stream channel diversion, it will comply with R645-301-742.300.
- 731.620. The area not to be disturbed will be designated as a buffer zone, and the operator will mark it as specified in R645-301-521.260.
- 731.700. Cross Sections and Maps. Each application will contain for the proposed permit area:
- 731.710. A map showing the locations of water supply intakes for current users of surface water flowing into, out of and within a hydrologic area defined by the Division, and those surface waters which will receive discharges from affected areas in the proposed permit area;
 - 731.720. A map showing the locations of each water diversion, collection, conveyance, treatment, storage and discharge facility to be used. The map will be prepared and certified according to R645-301-512;
 - 731.730. A map showing locations and elevations of each station to be used for water monitoring during coal mining and reclamation operations. The map will be prepared and certified according to R645-301-512;
 - 731.740. A map showing the locations of each existing and proposed sedimentation pond, impoundment and coal processing waste bank, dam or embankment. The map will be prepared and certified according to R645-301-512;
 - 731.750. Cross sections for each existing and proposed sedimentation pond, impoundment and coal processing waste bank, dam or embankment. The cross sections will be prepared and certified according to R645-301-512.200; and

- 731.760. Other relevant cross sections and maps required by the Division depending on the structures and facilities located in the permit area.
- 731.800. Water Rights and Replacement. Any person who conducts SURFACE COAL MINING AND RECLAMATION ACTIVITIES will replace the water supply of an owner of interest in real property who obtains all or part of his or her supply of water for domestic, agricultural, industrial, or other legitimate use from an underground or surface source, where the water supply has been adversely impacted by contamination, diminution, or interruption proximately resulting from the surface mining activities. Baseline hydrologic information required in R645-301-624.100 through R645-301-624.200, R645-301-625, R645-301-626, R645-301-723 through R645-301-724.300, R645-301-724.500, R645-301-725 through R645-301-731, and R645-301-731.210 through R645-301-731.223 will be used to determine the extent of the impact of mining upon ground water and surface water.
732. Sediment Control Measures.
- 732.100. Siltation Structures. Siltation structures will be constructed and maintained to comply with R645-301-742.214. Any siltation structure that impounds water will be constructed and maintained to comply with R645-301-512.240, R645-301-514.300, R645-301-515.200, R645-301-533.100 through R645-301-533.600, R645-301-733.220 through R645-301-733.224, and R645-301-743.
- 732.200. Sedimentation Ponds.
- 732.210. Sedimentation ponds whether temporary or permanent, will be designed in compliance with the requirements of R645-301-356.300, R645-301-356.400, R645-301-513.200, R645-301-742.200 through R645-301-742.240, and R645-301-763. Any sedimentation pond or earthen structure which will remain on the proposed permit area as a permanent water impoundment will also be constructed and maintained to comply with the requirements of R645-301-743, R645-301-533.100 through R645-301-533.600, R645-301-512.240, R645-301-514.310 through R645-301-514.321 and R645-301-515.200.
- 732.220. Each plan will, at a minimum, comply with the MSHA requirements given under R645-301-513.100 and R645-301-513.200.
- 732.300. Diversions. All diversions will be constructed and maintained to comply with the requirements of R645-301-742.100 and R645-301-742.300.
- 732.400. Road Drainage. All roads will be constructed, maintained and reconstructed to comply with R645-301-742.400.
- 732.410. The permit application will contain a description of measures to be taken to obtain Division approval for alteration or relocation of a natural drainageway under R645-301-358, R645-301-512.250, R645-301-527.100, R645-301-527.230, R645-301-534.100, R645-301-534.200, R645-301-534.300, R645-301-542.600, R645-301-742.410, R645-301-742.420, R645-301-752.200, and R645-301-762.
- 732.420. The permit application will contain a description of measures, other than use of a rock headwall, to be taken to protect the inlet end of a ditch relief culvert, for Division approval under R645-301-358, R645-301-512.250, R645-301-527.100, R645-301-527.230, R645-301-534.100, R645-301-534.200, R645-301-534.300, R645-301-542.600, R645-301-742.410, R645-301-742.420, R645-301-752.200, and R645-301-762.
733. Impoundments.
- 733.100. General Plans. Each permit application will contain a general plan for each proposed water impoundment within the proposed permit area. Each general plan will:
- 733.110. Be prepared and certified as described under R645-301-512;
- 733.120. Contain maps and cross sections;
- 733.130. Contain a narrative that describes the structure;
- 733.140. Contain the results of a survey as described under R645-301-531;
- 733.150. Contain preliminary hydrologic and geologic information required to assess the hydrologic impact of the structure; and
- 733.160. Contain a certification statement which includes a schedule setting forth the dates when any detailed design plans for structures that are not submitted with the general plan will be submitted to the Division. The Division will have approved, in writing, the detailed design plan for a structure before construction of the structure begins.
- 733.200. Permanent and Temporary Impoundments.
- 733.210. Permanent and temporary impoundments will be designed to comply with the requirements of R645-301-512.240, R645-301-514.300, R645-301-515.200, R645-301-533.100 through R645-301-533.600, R645-301-733.220 through R645-301-733.226, R645-301-743.240, and R645-301-743. Each plan for an impoundment meeting the size or other criteria of the Mine Safety and Health Administration will comply with the requirements of 30 CFR 77.216-1 and 30 CFR 77.216-2. The plan required to be submitted to the District Manager of MSHA under 30 CFR 77.216 will be submitted to the Division as part of the permit application package. For an impoundment not meeting the size criteria of 30 CFR 77.216(a) and located where failure would not be expected to cause loss of life or serious property damage, the Division may establish through the Utah State program approval process engineering design standards that ensure stability comparable to a 1.3 minimum static safety factor in lieu of engineering tests to establish compliance with the minimum static safety factor of 1.3 specified in R645-301-533.100.
- 733.220. A permanent impoundment of water may be created, if authorized by the Division in the approved permit based upon the following demonstration:
- 733.221. The size and configuration of such impoundment will be adequate for its intended purposes;
- 733.222. The quality of impounded water will be suitable on a permanent basis for its intended use and, after reclamation, will meet applicable Utah and federal water quality standards, and discharges from the impoundment will meet applicable effluent limitations and will not

degrade the quality of receiving water below applicable Utah and federal water quality standards;

- 733.223. The water level will be sufficiently stable and be capable of supporting the intended use;
- 733.224. Final grading will provide for adequate safety and access for proposed water users;
- 733.225. The impoundment will not result in the diminution of the quality and quantity of water utilized by adjacent or surrounding landowners for agricultural, industrial, recreational or domestic uses; and
- 733.226. The impoundment will be suitable for the approved postmining land use.
- 733.230. The Division may authorize the construction of temporary impoundments as part of coal mining and reclamation operations.
- 733.240. If any examination or inspection discloses that a potential hazard exists, the person who examined the impoundment will promptly inform the Division according to R645-301-515.200.
734. Discharge Structures. Discharge structures will be constructed and maintained to comply with R645-301-744.
735. Disposal of Excess Spoil. Areas designated for the disposal of excess spoil and excess spoil structures will be constructed and maintained to comply with R645-301-745.
736. Coal Mine Waste. Areas designated for the disposal of coal mine waste and coal mine waste structures will be constructed and maintained to comply with R645-301-746.
737. Noncoal Mine Waste. Noncoal mine waste will be stored and final disposal of noncoal mine waste will comply with R645-301-747.
738. Temporary Casing and Sealing of Wells. Each well which has been identified in the approved permit application to be used to monitor ground water conditions will comply with R645-301-748 and be temporarily sealed before use and for the purposes of SURFACE COAL MINING AND RECLAMATION ACTIVITIES protected during use by barricades, or fences, or other protective devices approved by the Division. These devices will be periodically inspected and maintained in good operating condition by the operator conducting SURFACE COAL MINING AND RECLAMATION ACTIVITIES.
740. Design Criteria and Plans.
741. General Requirements. Each permit application will include site-specific plans that incorporate minimum design criteria as set forth in R645-301-740 for the control of drainage from disturbed and undisturbed areas.
742. Sediment Control Measures.
- 742.100. General Requirements.
- 742.110. Appropriate sediment control measures will be designed, constructed and maintained using the best technology currently available to:
- 742.111. Prevent, to the extent possible, additional contributions of sediment to stream flow or to runoff outside the permit area;
- 742.112. Meet the effluent limitations under R645-301-751; and
- 742.113. Minimize erosion to the extent possible.
- 742.120. Sediment control measures include practices carried out within and adjacent to the disturbed area. The sedimentation storage capacity of practices in and downstream from the disturbed areas will reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment. Sediment control measures consist of the utilization of proper mining and reclamation methods and sediment control practices, singly or in combination. Sediment control methods include, but are not limited to:
- 742.121. Retaining sediment within disturbed areas;
- 742.122. Diverting runoff away from disturbed areas;
- 742.123. Diverting runoff using protected channels or pipes through disturbed areas so as not to cause additional erosion;
- 742.124. Using straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds and other measures that reduce overland flow velocities, reduce runoff volumes or trap sediment;
- 742.125. Treating with chemicals; and
- 742.126. For the purposes of UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES, treating mine drainage in underground sumps.
- 742.200. Siltation Structures.
- 742.210. General Requirements.
- 742.211. Additional contributions of suspended solids and sediment to streamflow or runoff outside the permit area will be prevented to the extent possible using the best technology currently available.
- 742.212. Siltation structures for an area will be constructed before beginning any coal mining and reclamation operations in that area and, upon construction, will be certified by a qualified registered professional engineer to be constructed as designed and as approved in the reclamation plan.
- 742.213. Any siltation structures which impounds water will be designed, constructed and maintained in accordance with R645-301-512.240, R645-301-514.300, R645-301-515.200, R645-301-533.100 through R645-301-533.600, R645-301-733.220 through R645-301-733.224, and R645-301-743.
- 742.214. For the purposes of UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES, any point-source discharge of water from underground workings to surface waters which does not meet the effluent limitations of R645-301-751 will be passed through a siltation structure before leaving the permit area.

- 742.220. Sedimentation Ponds.
- 742.221. Sedimentation ponds, when used, will:
- 742.221.1. Be used individually or in series;
 - 742.221.2. Be located as near as possible to the disturbed area and out of perennial streams unless approved by the Division; and
 - 742.221.3. Be designed, constructed, and maintained to:
 - 742.221.31. Provide adequate sediment storage volume;
 - 742.221.32. Provide adequate detention time to allow the effluent from the ponds to meet Utah and federal effluent limitations;
 - 742.221.33. Contain or treat the 10-year, 24-hour precipitation event ("design event") unless a lesser design event is approved by the Division based on terrain, climate, or other site-specific conditions and on a demonstration by the operator that the effluent limitations of R645-301-751 will be met;
 - 742.221.34. Provide a nonclogging dewatering device adequate to maintain the detention time required under R645-301-742.221.32.
 - 742.221.35. Minimize, to the extent possible, short circuiting;
 - 742.221.36. Provide periodic sediment removal sufficient to maintain adequate volume for the design event;
 - 742.221.37. Ensure against excessive settlement;
 - 742.221.38. Be free of sod, large roots, frozen soil, and acid- or toxic forming coal-processing waste; and
 - 742.221.39. Be compacted properly.
- 742.222. Sedimentation ponds meeting the size or other qualifying criteria of the MSHA, 30 CFR 77.216(a) will comply with all the requirements of that section, and will have a single spillway or principal and emergency spillways that in combination will safely pass a 100-year, 6-hour precipitation event or greater event as demonstrated to be necessary by the Division.
- 742.223. Sedimentation ponds not meeting the size or other qualifying criteria of the MSHA, 30 CFR 77.216(a) will provide a combination of principal and emergency spillways that will safely discharge a 25-year, 6-hour precipitation event or greater event as demonstrated to be needed by the Division. Such ponds may use a single open channel spillway if the spillway is:
- 742.223.1. Of nonerodible construction and designed to carry sustained flows; or
 - 742.223.2. Earth- or grass-lined and designed to carry short-term infrequent flows at non-erosive velocities where sustained flows are not expected.
- 742.224. In lieu of meeting the requirements of R645-301-742.223.1 and 742.223.2 the Division may approve a sedimentation pond that relies primarily on storage to control the runoff from the design precipitation event when it is demonstrated by the operator and certified by a qualified registered professional engineer in accordance with R645-301-512.200 that the sedimentation pond will safely control the design precipitation event. The water will be removed from the pond in accordance with current, prudent, engineering practices and any sediment pond so used will not be located where failure would be expected to cause loss of life or serious property damage.
- 742.225. An exception to the sediment pond location guidance in R645-301-742.224 may be allowed:
- 742.225.1. In the case of a sedimentation pond meeting the size or other criteria of 30 CFR 77.216(a), if the pond is designed to control the precipitation of the probable maximum precipitation of a 6 hour event or greater event if specified by the Division; or (30 CFR 816.46(c)(2)(ii)(A))
 - 742.225.2. In the case of a sedimentation pond not meeting the size or other criteria of 30 CFR 77.216(a), if the pond is designed to control the precipitation of a 100 year 6 hour event or greater event if demonstrated to be needed by the Division.
- 742.230. Other Treatment Facilities.
- 742.231. Other treatment facilities will be designed to treat the 10-year, 24-hour precipitation event unless a lesser design event is approved by the Division based on terrain, climate, other site-specific conditions and a demonstration by the operator that the effluent limitations of R645-301-751 will be met.
- 742.232. Other treatment facilities will be designed in accordance with the applicable requirements of R645-301-742.220.
- 742.240. Exemptions. Exemptions to the requirements of R645-301-742.200 and R645-301-763 may be granted if the disturbed drainage area within the total disturbed area is small and the operator demonstrates that siltation structures and alternate sediment control measures are not necessary for drainage from the disturbed areas to meet the effluent limitations under R645-301-751 or the applicable Utah and federal water quality standards for the receiving waters.
- 742.300. Diversions.
- 742.310. General Requirements.
- 742.311. With the approval of the Division, any flow from mined areas abandoned before May 3, 1978, and any flow from undisturbed areas or reclaimed areas, after meeting the criteria of R645-301-356.300, R645-301-356.400, R645-301-513.200, R645-301-742.200 through R645-301-742.240, and R645-301-763 for siltation structure removal, may be diverted from disturbed areas by means of temporary or permanent diversions. All diversions will be designed to minimize adverse impacts to the hydrologic balance within the permit and adjacent areas, to prevent material damage outside the permit area and to assure the safety of the public. Diversions will not be used to divert water into underground mines without approval of the Division in accordance with R645-301-731.510.
- 742.312. The diversion and its appurtenant structures will be designed, located, constructed, maintained and used to:
- 742.312.1. Be stable;

- 742.312.2. Provide protection against flooding and resultant damage to life and property;
- 742.312.3. Prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow outside the permit area; and
- 742.312.4. Comply with all applicable local, Utah, and federal laws and regulations.
- 742.313. Temporary diversions will be removed when no longer needed to achieve the purpose for which they were authorized. The land disturbed by the removal process will be restored in accordance with R645-301 and R645-302. Before diversions are removed, downstream water-treatment facilities previously protected by the diversion will be modified or removed, as necessary, to prevent overtopping or failure of the facilities. This requirement will not relieve the operator from maintaining water-treatment facilities as otherwise required. A permanent diversion or a stream channel reclaimed after the removal of a temporary diversion will be designed and constructed so as to restore or approximate the premining characteristics of the original stream channel including the natural riparian vegetation to promote the recovery and the enhancement of the aquatic habitat.
- 742.314. The Division may specify additional design criteria for diversions to meet the requirements of R645-301-742.300.
- 742.320. Diversion of Perennial and Intermittent Streams.
- 742.321. Diversion of perennial and intermittent streams within the permit area may be approved by the Division after making the finding relating to stream buffer zones under R645-301-731.600.
- 742.322. The design capacity of channels for temporary and permanent stream channel diversions will be at least equal to the capacity of the unmodified stream channel immediately upstream and downstream from the diversion.
- 742.323. The requirements of R645-301-742.312.2 will be met when the temporary and permanent diversion for perennial and intermittent streams are designed so that the combination of channel, bank and floodplain configuration is adequate to pass safely the peak runoff of a 10-year, 6-hour precipitation event for a temporary diversion and a 100-year, 6-hour precipitation event for a permanent diversion.
- 742.324. The design and construction of all stream channel diversions of perennial and intermittent streams will be certified by a qualified registered professional engineer as meeting the performance standards of R645-301 and R645-302 and any design criteria set by the Division.
- 742.330. Diversion of Miscellaneous Flows.
- 742.331. Miscellaneous flows, which consist of all flows except for perennial and intermittent streams, may be diverted away from disturbed areas if required or approved by the Division. Miscellaneous flows will include ground-water discharges and ephemeral streams.
- 742.332. The design, location, construction, maintenance, and removal of diversions of miscellaneous flows will meet all of the performance standards set forth in R645-301-742.310.
- 742.333. The requirements of R645-301-742.312.2 will be met when the temporary and permanent diversions for miscellaneous flows are designed so that the combination of channel, bank and floodplain configuration is adequate to pass safely the peak runoff of a 2-year, 6-hour precipitation event for a temporary diversion and a 10-year, 6-hour precipitation event for a permanent diversion.
- 742.400. Road Drainage.
- 742.410. All Roads.
- 742.411. To ensure environmental protection and safety appropriate for their planned duration and use, including consideration of the type and size of equipment used, the design and construction or reconstruction of roads will incorporate appropriate limits for surface drainage control, culvert placement, culvert size, and any necessary design criteria established by the Division.
- 742.412. No part of any road will be located in the channel of an intermittent or perennial stream unless specifically approved by the Division in accordance with applicable parts of R645-301-731 through R645-301-742.300.
- 742.413. Roads will be located to minimize downstream sedimentation and flooding.
- 742.420. Primary Roads.
- 742.421. To minimize erosion, a primary road is to be located, insofar as practical, on the most stable available surfaces.
- 742.422. Stream fords by primary roads are prohibited unless they are specifically approved by the Division as temporary routes during periods of construction.
- 742.423. Drainage Control.
- 742.423.1. Each primary road will be designed, constructed or reconstructed and maintained to have adequate drainage control, using structures such as, but not limited to, bridges, ditches, cross drains, and ditch relief drains. The drainage control system will be designed to pass the peak runoff safely from a 10-year, 6-hour precipitation event, or an alternative event of greater size as demonstrated to be needed by the Division.
- 742.423.2. Drainage pipes and culverts will be constructed to avoid plugging or collapse and erosion at inlets and outlets.
- 742.423.3. Drainage ditches will be designed to prevent uncontrolled drainage over the road surface and embankment. Trash racks and debris basins will be installed in the drainage ditches where debris from the drainage area may impair the functions of drainage and sediment control structures.
- 742.423.4. Natural stream channels will not be altered or relocated without the prior approval of the Division in accordance with R645-301-731.100 through R645-301-731.522, R645-301-731.600, R645-301-731.800, R645-301-742.300, and R645-301-751.

- 742.423.5. Except as provided in R645-301-742.422, drainage structures will be used for stream channel crossings, made using bridges, culverts or other structures designed, constructed and maintained using current, prudent engineering practice.
743. Impoundments.
- 743.100. General Requirements. The requirements of R645-301-743 apply to both temporary and permanent impoundments.
- 743.110. Impoundments meeting the criteria of the MSHA, 30 CFR 77.216(a) will comply with the requirements of 77.216 and R645-301-512.240, R645-301-514.300, R645-301-515.200, R645-301-533.100 through R645-301-533.600, R645-301-733.220 through R645-301-733.224, and R645-301-743. The plan required to be submitted to the District Manager of MSHA under 30 CFR 77.216 will also be submitted to the Division as part of the permit application.
- 743.120. The design of impoundments will be prepared and certified as described under R645-301-512. Impoundments will have adequate freeboard to resist overtopping by waves and by sudden increases in storage volume.
- 743.130. Impoundments will include either a combination of principal and emergency spillways or a single spillway as specified in 743.131 which will be designed and constructed to safely pass the design precipitation event or greater event specified in R645-301-743.200 or R645-301-743.300.
- 743.131. The Division may approve a single-open channel spillway that is:
- 743.131.1. Of nonerodible construction and designed to carry sustained flows; or
- 743.131.2. Earth-or grass lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected.
- 743.132. In lieu of meeting the requirements of 743.131 the Division may approve an impoundment which meets the requirements of the sediment pond criteria of R645-301-742.224 and 742.225.
- 743.140. Impoundments will be inspected as described under R645-301-514.300.
- 743.200. The design precipitation event for the spillways for a permanent impoundment meeting the size or other criteria of MSHA rule 30 CFR 77.216(a) is a 100-year, 6-hour precipitation event, or such larger event as demonstrated to be needed by the Division.
- 743.300. The design precipitation event for the spillways for an impoundment not meeting the size or other criteria of MSHA rule 30 CFR 77.216(a) is a 25-year, 6-hour precipitation event, or such larger event as demonstrated to be needed by the Division.
744. Discharge Structures.
- 744.100. Discharge from sedimentation ponds, permanent and temporary impoundments, coal processing waste dams and embankments, and diversions will be controlled, by energy dissipators, riprap channels and other devices, where necessary to reduce erosion to prevent deepening or enlargement of stream channels, and to minimize disturbance of the hydrologic balance.
- 744.200. Discharge structures will be designed according to standard engineering design procedures.
745. Disposal of Excess Spoil.
- 745.100. General Requirements.
- 745.110. Excess spoil will be placed in designated disposal areas within the permit area, in a controlled manner to:
- 745.111. Minimize the adverse effects of leachate and surface water runoff from the fill on surface and ground waters;
- 745.112. Ensure permanent impoundments are not located on the completed fill. Small depressions may be allowed by the Division if they are needed to retain moisture or minimize erosion, create and enhance wildlife habitat or assist revegetation, and if they are not incompatible with the stability of the fill; and
- 745.113. Adequately cover or treat excess spoil that is acid- and toxic-forming with nonacid nontoxic material to control the impact on surface and ground water in accordance with R645-301-731.300 and to minimize adverse effects on plant growth and the approved postmining land use.
- 745.120. Drainage control. If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, the fill design will include diversions and underdrains as necessary to control erosion, prevent water infiltration into the fill and ensure stability.
- 745.121. Diversions will comply with the requirements of R645-301-742.300.
- 745.122. Underdrains will consist of durable rock or pipe designed and constructed using current, prudent engineering practices and meet any design criteria established by the Division. The underdrain system will be designed to carry the anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area and will be protected from piping and contamination by an adequate filter. Rock underdrains will be constructed of durable, nonacid-, nontoxic-forming rock (e.g., natural sand and gravel, sandstone, limestone or other durable rock) that does not slake in water or degrade to soil materials and which is free of coal, clay or other nondurable material. Perforated pipe underdrains will be corrosion resistant and will have characteristics consistent with the long-term life of the fill.
- 745.200. Valley Fills and Head-of-Hollow Fills.
- 745.210. Valley fills and head-of-hollow fills will meet the applicable requirements of R645-301-211, R645-301-212, R645-301-412.300, R645-301-512.210, R645-301-514.100, R645-301-528.310, R645-301-535.100 through R645-301-535.130, R645-301-535.500, R645-301-536.300, R645-301-542.720, R645-301-553.240, and R645-301-745.100 and the requirements of R645-301-745.200 and R645-301-535.200.

- 745.220. Drainage Control.
- 745.221. The top surface of the completed fill will be graded such that the final slope after settlement will be toward properly designed drainage channels. Uncontrolled surface drainage may not be directed over the outslope of the fill.
- 745.222. Runoff from areas above the fill and runoff from the surface of the fill will be diverted into stabilized diversion channels designed to meet the requirements of R645-301-742.300 and to safely pass the runoff from a 100-year, 6-hour precipitation event.
- 745.300. Durable Rock Fills. The Division may approve disposal of excess durable rock spoil provided the following conditions are satisfied:
- 745.310. Except as provided in R645-301-745.300, the requirements of R645-301-211, R645-301-212, R645-301-412.300, R645-301-512.210, R645-301-514.100, R645-301-528.310, R645-301-535.100 through R645-301-535.130, R645-301-535.500, R645-301-536.300, R645-301-542.720, R645-301-553.240, and R645-301-745.100 are met;
- 745.320. The underdrain system may be constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, provided the resulting underdrain system is capable of carrying anticipated seepage of water due to rainfall away from the excess spoil fill and from seeps and springs in the foundation of the disposal area and the other requirements for drainage control are met; and
- 745.330. Surface water runoff from areas adjacent to and above the fill is not allowed to flow onto the fill and is diverted into stabilized diversion channels designed to meet the requirements of R645-301-742.300 and to safely pass the runoff from a 100-year, 6-hour precipitation event.
- 745.400. Preexisting Benches. The Division may approve the disposal of excess spoil through placement on preexisting benches, provided that the requirements of R645-301-211, R645-301-212, R645-301-412.300, R645-301-512.210, R645-301-512.220, R645-301-514.100, R645-301-535.100, R645-301-535.112 through R645-301-535.130, R645-301-535.300 through R645-301-536.300, R645-301-542.720, R645-301-553.240, R645-301-745.100, R645-301-745.300, and R645-301-745.400 and the requirements of R645-301-535.400 are met.
746. Coal Mine Waste.
- 746.100. General Requirements.
- 746.110. All coal mine waste will be placed in new or existing disposal areas within a permit area which are approved by the Division.
- 746.120. Coal mine waste will be placed in a controlled manner to minimize adverse effects of leachate and surface water runoff on surface and ground water quality and quantity.
- 746.200. Refuse Piles.
- 746.210. Refuse piles will meet the requirements of R645-301-512.230, R645-301-515.200, R645-301-528.320, R645-301-536 through R645-301-536.200, R645-301-536.500, R645-301-542.730, and R645-301-746.100 and the additional requirements of R645-301-210, R645-301-513.400, R645-301-514.200, R645-301-528.322, R645-301-536.900, R645-301-553.250, and R645-301-746.200 and the requirements of the MSHA, 30 CFR 77.214 and 77.215.
- 746.211. If the disposal area contains springs, natural or manmade water courses, or wet weather seeps, the design will include diversions and underdrains as necessary to control erosion, prevent water infiltration into the disposal facility and ensure stability.
- 746.212. Uncontrolled surface drainage may not be diverted over the outslope of the refuse pile. Runoff from areas above the refuse pile and runoff from the surface of the refuse pile will be diverted into stabilized diversion channels designed to meet the requirements of R645-301-742.300 to safely pass the runoff from a 100-year, 6-hour precipitation event. Runoff diverted from undisturbed areas need not be commingled with runoff from the surface of the refuse pile.
- 746.213. Underdrains will comply with the requirements of R645-301-745.122.
- 746.220. Surface Area Stabilization.
- 746.221. Slope protection will be provided to minimize surface erosion at the site. All disturbed areas, including diversion channels that are not riprapped or otherwise protected, will be revegetated upon completion of construction.
- 746.222. No permanent impoundments will be allowed on the completed refuse pile. Small depressions may be allowed by the Division if they are needed to retain moisture, minimize erosion, create and enhance wildlife habitat, or assist revegetation, and if they are not incompatible with stability of the refuse pile.
- 746.300. Impounding structures. New and existing impounding structures constructed of coal mine waste or intended to impound coal mine waste will meet the requirements of R645-301-512.230, R645-301-515.200, R645-301-528.320, R645-301-536 through R645-301-536.200, R645-301-536.500, R645-301-542.730, and R645-301-746.100.
- 746.310. Coal mine waste will not be used for construction of impounding structures unless it has been demonstrated to the Division that the use of coal mine waste will not have a detrimental effect on downstream water quality or the environment due to acid seepage through the impounding structure. The potential impact of acid mine seepage through the impounding structure will be discussed in detail.
- 746.311. Each impounding structure constructed of coal mine waste or intended to impound coal mine waste will be designed, constructed and maintained in accordance with R645-301-512.240, R645-301-513.200, R645-301-514.310 through R645-301-514.330, R645-301-515.200, R645-301-533.100 through R645-301-533.500, R645-301-733.230, R645-301-733.240, R645-301-743.100, and R645-301-743.300. Such structures may not be retained permanently as part of the approved postmining land use.
- 746.312. Each impounding structure constructed of coal mine waste or intended to impound coal mine waste that meets the criteria of 30 CFR 77.216(a) will have sufficient spillway

capacity to safely pass, adequate storage capacity to safely contain, or a combination of storage capacity and spillway capacity to safely control the probable maximum precipitation of a 6-hour precipitation event, or greater event as demonstrated to be needed by the Division.

- 746.320. Spillways and outlet works will be designed to provide adequate protection against erosion and corrosion. Inlets will be protected against blockage.
- 746.330. Drainage control. Runoff from areas above the disposal facility or runoff from the surface of the facility that may cause instability or erosion of the impounding structure will be diverted into stabilized diversion channels designed to meet the requirements of R645-301-742.300 and designed to safely pass the runoff from a 100-year, 6-hour design precipitation event.
- 746.340. Impounding structures constructed of or impounding coal mine waste will be designed and operated so that at least 90 percent of the water stored during the design precipitation event will be removed within a 10-day period following that event.
- 746.400. Return of Coal Processing Waste to Abandoned Underground Workings. Each permit application to conduct UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES will, if appropriate, include a plan of proposed methods for returning coal processing waste to abandoned underground workings as follows:
- 746.410. The plan will describe the source of the hydraulic transport mediums, method of dewatering the placed backfill, retainment of water underground, treatment of water if released to surface streams and the effect on the hydrologic regime;
- 746.420. The plan will describe each permanent monitoring well to be located in the backfilled areas, the stratum underlying the mined coal and gradient from the backfilled area; and
- 746.430. The requirements of R645-301-513.300, R645-301-528.321, R645-301-536.700, R645-301-746.410 and R645-746.420 will also apply to pneumatic backfilling operations, except where the operations are exempted by the Division from requirements specifying hydrologic monitoring.
- 747. Disposal of Noncoal Mine Waste.
- 747.100. Noncoal mine waste, including but not limited to grease, lubricants, paints, flammable liquids, garbage, machinery, lumber and other combustible materials generated during coal mining and reclamation operations will be placed and stored in a controlled manner in a designated portion of the permit area or state-approved solid waste disposal area.
- 747.200. Placement and storage of noncoal mine waste within the permit area will ensure that leachate and surface runoff do not degrade surface or ground water.
- 747.300. Final disposal of noncoal mine waste within the permit area will ensure that leachate and drainage does not degrade surface or underground water.
- 748. Casing and Sealing of Wells. Each water well will be cased, sealed, or otherwise managed, as approved by the Division, to prevent acid or other toxic drainage from entering ground or

surface water, to minimize disturbance to the hydrologic balance, and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit and adjacent area. If a water well is exposed by coal mining and reclamation operations, it will be permanently closed unless otherwise managed in a manner approved by the Division. Use of a drilled hole or borehole or monitoring well as a water well must comply with the provision of R645-301-731.100 through R645-301-731.522 and R645-301-731.800.

750. Performance Standards.

All coal mining and reclamation operations will be conducted to minimize disturbance to the hydrologic balance within the permit and adjacent areas, to prevent material damage to the hydrologic balance outside the permit area and support approved postmining land uses in accordance with the terms and conditions of the approved permit and the performance standards of R645-301 and R645-302. For the purposes of SURFACE COAL MINING AND RECLAMATION ACTIVITIES, operations will be conducted to assure the protection or replacement of water rights in accordance with the terms and conditions of the approved permit and the performance standards of R645-301 and R645-302.

751. Water Quality Standards and Effluent Limitations. Discharges of water from areas disturbed by coal mining and reclamation operations will be made in compliance with all Utah and federal water quality laws and regulations and with effluent limitations for coal mining promulgated by the U.S. Environmental Protection Agency set forth in 40 CFR Part 434.

752. Sediment Control Measures. Sediment control measures must be located, maintained, constructed and reclaimed according to plans and designs given under R645-301-732, R645-301-742 and R645-301-760.

752.100. Siltation structures and diversions will be located, maintained, constructed and reclaimed according to plans and designs given under R645-301-732, R645-301-742 and R645-301-763.

752.200. Road Drainage. Roads will be located, designed, constructed, reconstructed, used, maintained and reclaimed according to R645-301-732.400, R645-301-742.400 and R645-301-762 and to achieve the following:

752.210. Control or prevent erosion, siltation and the air pollution attendant to erosion by vegetating or otherwise stabilizing all exposed surfaces in accordance with current, prudent engineering practices;

752.220. Control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area;

752.230. Neither cause nor contribute to, directly or indirectly, the violation of effluent standards given under R645-301-751;

752.240. Minimize the diminution to or degradation of the quality or quantity of surface- and ground-water systems; and

752.250. Refrain from significantly altering the normal flow of water in streambeds or drainage channels.

753. Impoundments and Discharge Structures. Impoundments and discharge structures will be located, maintained, constructed and reclaimed to comply with R645-301-733, R645-301-734, R645-301-743, R645-301-745 and R645-301-760.

754. Disposal of Excess Spoil, Coal Mine Waste and Noncoal Mine Waste. Disposal areas for excess spoil, coal mine waste and noncoal mine waste will be located, maintained, constructed and reclaimed to comply with R645-301-735, R645-301-736, R645-301-745, R645-301-746, R645-301-747 and R645-301-760.
755. Casing and Sealing of Wells. All wells will be managed to comply with R645-301-748 and R645-301-765. Water monitoring wells will be managed on a temporary basis according to R645-301-738.
760. Reclamation.
761. General Requirements. Before abandoning a permit area or seeking bond release, the operator will ensure that all temporary structures are removed and reclaimed, and that all permanent sedimentation ponds, diversions, impoundments and treatment facilities meet the requirements of R645-301 and R645-302 for permanent structures, have been maintained properly and meet the requirements of the approved reclamation plan for permanent structures and impoundments. The operator will renovate such structures if necessary to meet the requirements of R645-301 and R645-302 and to conform to the approved reclamation plan.
762. Roads. A road not to be retained for use under an approved postmining land use will be reclaimed immediately after it is no longer needed for coal mining and reclamation operations, including:
- 762.100. Restoring the natural drainage patterns;
- 762.200. Reshaping all cut and fill slopes to be compatible with the postmining land use and to complement the drainage pattern of the surrounding terrain.
763. Siltation Structures.
- 763.100. Siltation structures will be maintained until removal is authorized by the Division and the disturbed area has been stabilized and revegetated. In no case will the structure be removed sooner than two years after the last augmented seeding.
- 763.200. When the siltation structure is removed, the land on which the siltation structure was located will be regraded and revegetated in accordance with the reclamation plan and R645-301-358, R645-301-356, and R645-301-357. Sedimentation ponds approved by the Division for retention as permanent impoundments may be exempted from this requirement.
764. Structure Removal. The application will include the timetable and plans to remove each structure, if appropriate.
765. Permanent Casing and Sealing of Wells. When no longer needed for monitoring or other use approved by the Division upon a finding of no adverse environmental or health and safety effects, or unless approved for transfer as a water well under R645-301-731.100 through R645-301-731.522 and R645-301-731.800, each well will be capped, sealed, backfilled, or otherwise properly managed, as required by the Division in accordance with R645-301-529.400, R645-301-631.100, and R645-301-748. Permanent closure measures will be designed to prevent access to the mine workings by people, livestock, fish and wildlife, machinery and to keep acid or other toxic drainage from entering ground or surface waters.

R645. Natural Resources; Oil, Gas and Mining; Coal.**R645-301. COAL MINE PERMITTING: PERMIT APPLICATION REQUIREMENTS****R645-301-800. BONDING AND INSURANCE***810. Bonding Definitions and Division Responsibilities**820. Requirement to File a Bond**830. Determination of Bond Amount**840. General Terms and Conditions of the Bond**850. Bonding Requirements for UNDERGROUND COAL MINING AND RECLAMATION ACTIVITIES and Associated Long-Term Coal-Related Surface Facilities and Structures**860. Forms of Bonds**870. Replacement of Bonds**880. Requirement to Release Performance Bonds**890. Terms and Conditions for Liability Insurance***R645-301-800. Bonding and Insurance.**

The rules in R645-301-800 set forth the minimum requirements for filing and maintaining bonds and insurance for coal mining and reclamation operations under the State Program.

810. Bonding Definitions and Division Responsibilities.

811. Terms used in R645-301-800 may be found defined in R645-100-200.

812. Division Responsibilities – Bonding.

812.100. The Division will prescribe and furnish forms for filing performance bonds.

812.200. The Division will prescribe by regulation terms and conditions for performance bonds and insurance.

812.300. The Division will determine the amount of the bond for each area to be bonded, in accordance with R645-301-830. The Division will also adjust the amount as acreage in the permit area is revised, or when other relevant conditions change according to the requirements of R645-301-830.400.

812.400. The Division may accept a self-bond if the permittee meets the requirements of R645-301-860.300 and any additional requirements in the State or Federal program.

812.500. The Division will release liability under a bond or bonds in accordance with R645-301-880 through R645-301-880.800.

812.600. If the conditions specified in R645-301-880.900 occur, the Division will take appropriate action to cause all or part of a bond to be forfeited in accordance with procedures of that Section.

812.700. The Division will require in the permit that adequate bond coverage be in effect at all times. Except as provided in R645-301-840.520, operating without a bond is a violation of a condition upon which the permit is issued.

820. Requirement to File a Bond.

820.100. After a permit application under R645-301 has been approved, but before a permit is issued, the applicant will file with the Division, on a form prescribed and furnished by the Division, a bond or bonds for performance made payable to the Division and conditioned upon the faithful

performance of all the requirements of the State Program, the permit and the reclamation plan.

820.110. Areas to be covered by the Performance Bond are:

820.111. The bond or bonds will cover the entire permit area, or an identified increment of land within the permit area upon which the operator will initiate and conduct coal mining and reclamation operations during the initial term of the permit.

820.112. As coal mining and reclamation operations on succeeding increments are initiated and conducted within the permit area, the permittee will file with the Division an additional bond or bonds to cover such increments in accordance with R645-830.400.

820.113. The operator will identify the initial and successive areas or increments for bonding on the permit application map submitted for approval as provided in the application, and will specify the bond amount to be provided for each area or increment.

820.114. Independent increments will be of sufficient size and configuration to provide for efficient reclamation operations should reclamation by the Division become necessary pursuant to R645-301-880.900.

820.120. An operator will not disturb any surface areas, succeeding increments, or extend any underground shafts, tunnels, or operations prior to acceptance by the Division of the required performance bond.

820.130. The applicant will file, with the approval of the Division, a bond or bonds under one of the following schemes to cover the bond amounts for the permit area as determined in accordance with R645-301-830:

820.131. A performance bond or bonds for the entire permit area;

820.132. A cumulative bond schedule and the performance bond required for full reclamation of the initial area to be disturbed; or

820.133. An incremental-bond schedule and the performance bond required for the first increment in the schedule.

820.200. Form of the Performance Bond.

820.210. The Division will prescribe the form of the performance bond.

820.220. The Division may allow for:

820.221. A surety bond;

820.222. A collateral bond;

820.223. A self-bond; or

820.224. A combination of any of these bonding methods.

820.300. Period of Liability.

820.310. Performance bond liability will be for the duration of the coal mining and reclamation operations and for a period which is coincident with the operator's period of extended responsibility for successful revegetation provided in R645-301-356 or until achievement of the reclamation